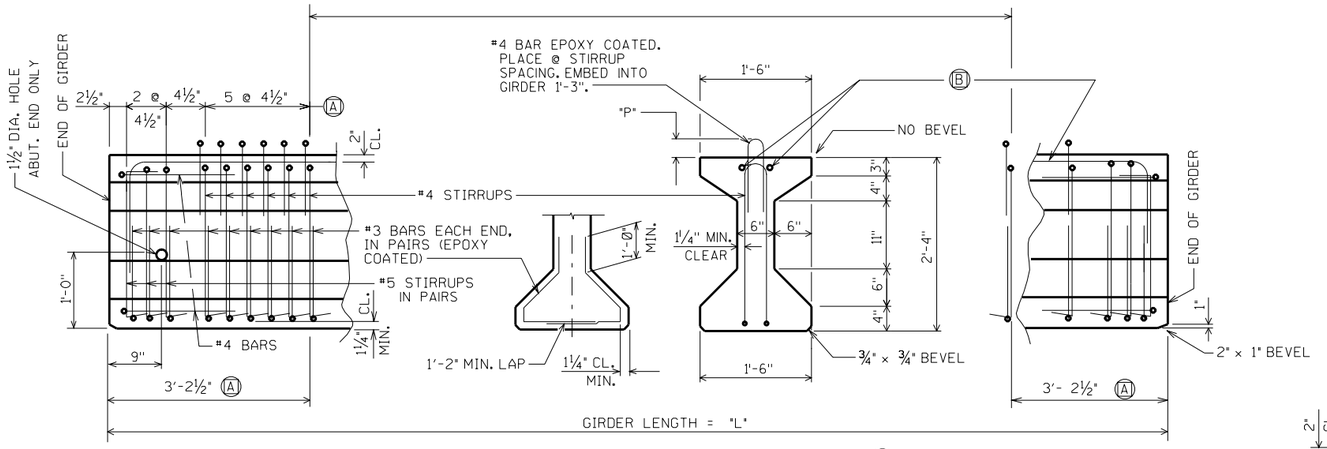
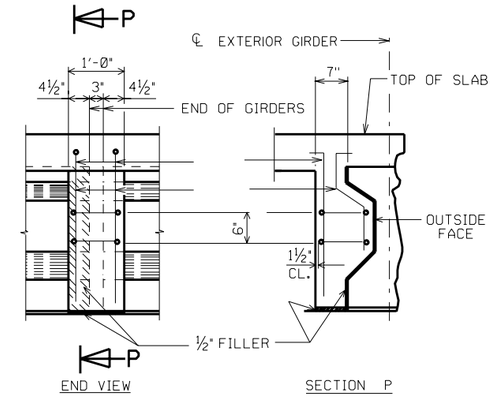
STATE PROJECT NUMBER
- -



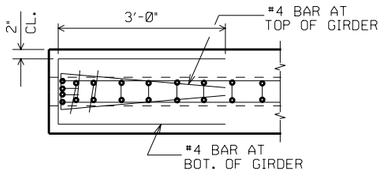
SIDE VIEW & TYP. SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

Ⓑ 2-BARS BEND DOWN 16 BAR DIA. AT ENDS



PILASTER DETAILS AT PIERS



TOP VIEW OF GIRDER ENDS

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 2" OF GIRDER, WHICH SHALL BE TROWEL FINISHED.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

PRESTRESSING STRANDS SHALL BE 0.5"Φ - 7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 psi AND SHALL BE FLUSH WITH THE ENDS OF THE GIRDER.

BEND EACH END OF #4 STIRRUPS 4½" AND #5 STIRRUPS 6".

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.

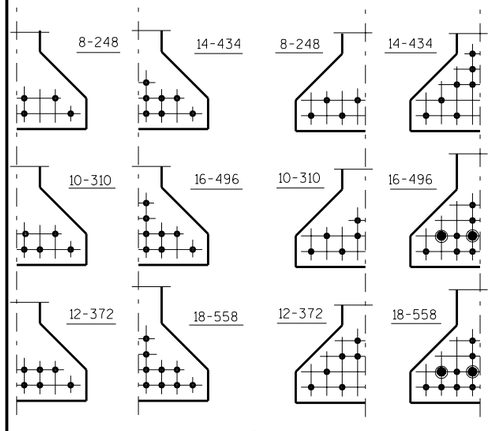
ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #4 STIRRUPS, 2 OPTIONS ARE AVAILABLE:

1. USE ASTM A706, GRADE 60 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.
2. USE ASTM A615, GRADE 40 REINFORCEMENT AND A MODIFIED STIRRUP SPACING SUBMITTED TO AND APPROVED BY THE STRUCTURES DEVELOPMENT SECTION.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION

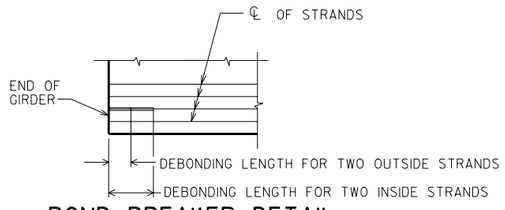
WELDED WIRE FABRIC SHALL CONFORM TO THE REQUIREMENTS OF ASTM A497.



◉ INDICATES STRAND TO BE DEBONDED. SEE "BOND BREAKER DETAIL"

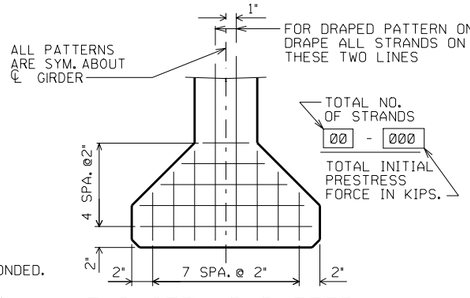
DRAPED PATTERN

UNDRAPED PATTERN

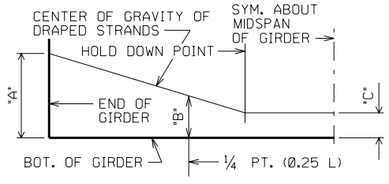


BOND BREAKER DETAIL

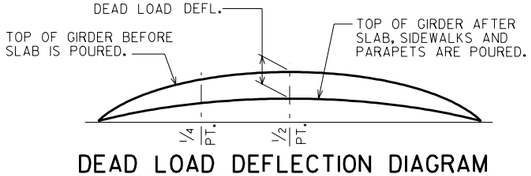
SHOWING LENGTHS OF DEBONDING FROM END OF GIRDER.



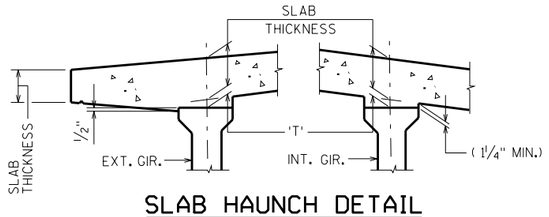
TYP. STRAND PATTERN



DRAPED STRAND PROFILE



DEAD LOAD DEFLECTION DIAGRAM



SLAB HAUNCH DETAIL

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- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- SLAB THICKNESS
= HAUNCH HEIGHT 'T'

✳ MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.) ⅛	¼	⅜	½	CONC. STRGTH. f'c (P.S.I.)	"P"	DIA. OF STRAND	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

28" PRESTRESSED GIRDER DETAILS

SHEET

8

LV = 12345678

FILE= G28.DGN
SCALE =
6-01

STATE PROJECT NUMBER
- -

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

* * DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER.

PART LONGIT. SECTION

1 2

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

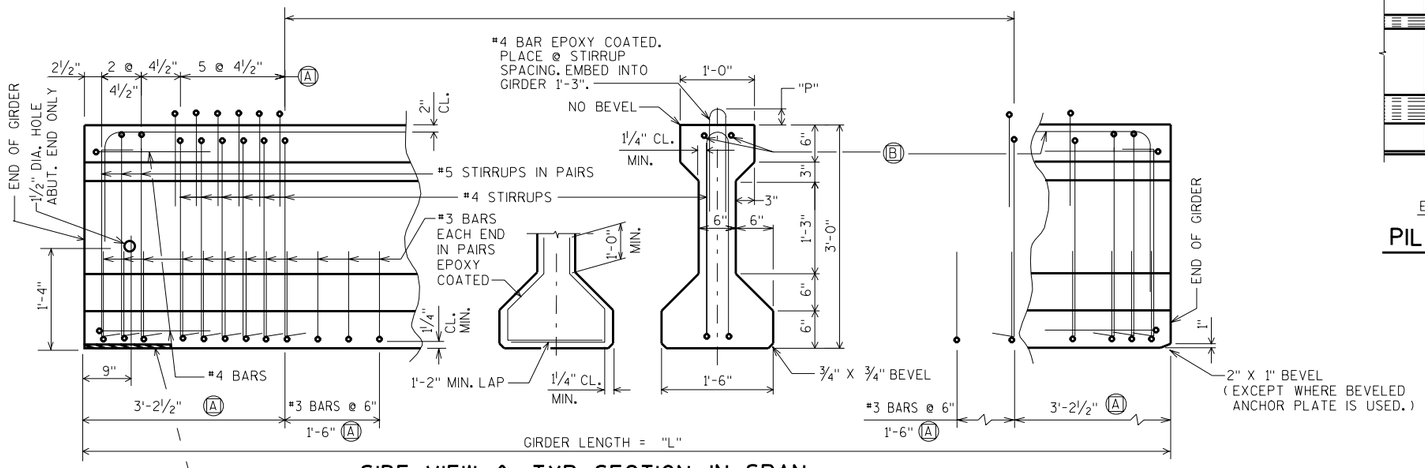
CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

28" PRESTRESSED GIRDER DETAILS

SHEET

FILE= G28DET.DGN
SCALE =
6-01

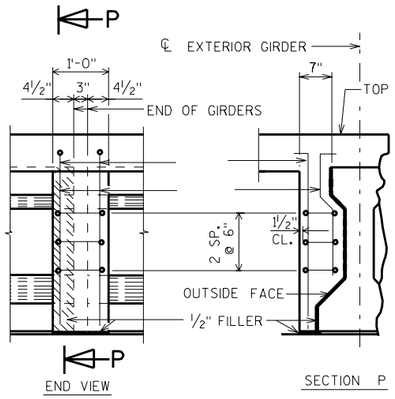
STATE PROJECT NUMBER
- -



SIDE VIEW & TYP. SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

Ⓑ 2-BARS BEND DOWN 16 BAR DIA. AT ENDS



PILASTER DETAILS AT PIERS

GIRDER NOTES

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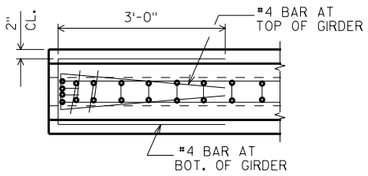
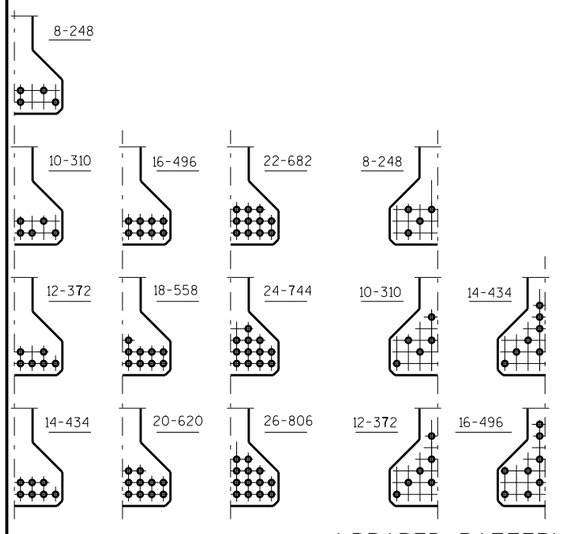
ENDS OF STRANDS SHALL BE PAINTED WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (THIS APPLIES ONLY TO THOSE ENDS OF GIRDERS THAT ARE FINALLY EXPOSED.)

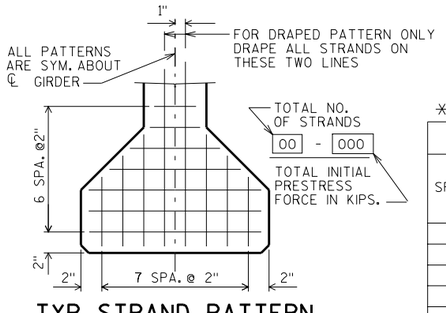


TOP VIEW OF GIRDER ENDS

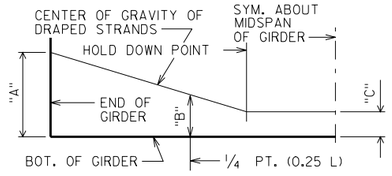


DRAPED PATTERN

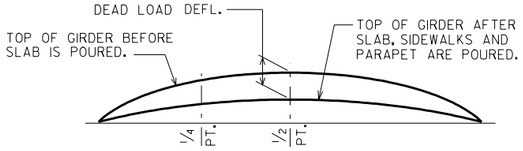
UNDRAPED PATTERN



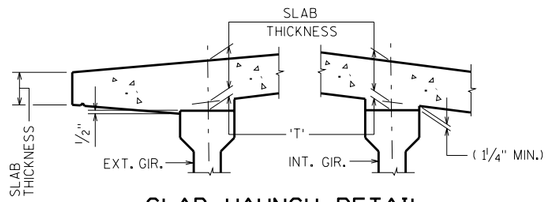
TYP. STRAND PATTERN



DRAPED STRAND PROFILE



DEAD LOAD DEFLECTION DIAGRAM



SLAB HAUNCH DETAIL

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- SLAB THICKNESS
= HAUNCH HEIGHT 'T'

✳ MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.) 1/8	1/4	3/8	1/2	CONC. STRGTH. f'c (P.S.I.)	"P"	DIA. OF STRAND	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

36" PRESTRESSED GIRDER DETAILS

SHEET

8

LV = 12345678

FILE= G36.DGN
SCALE =

7-02

STATE PROJECT NUMBER
- -

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER.

PART LONGIT. SECTION

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

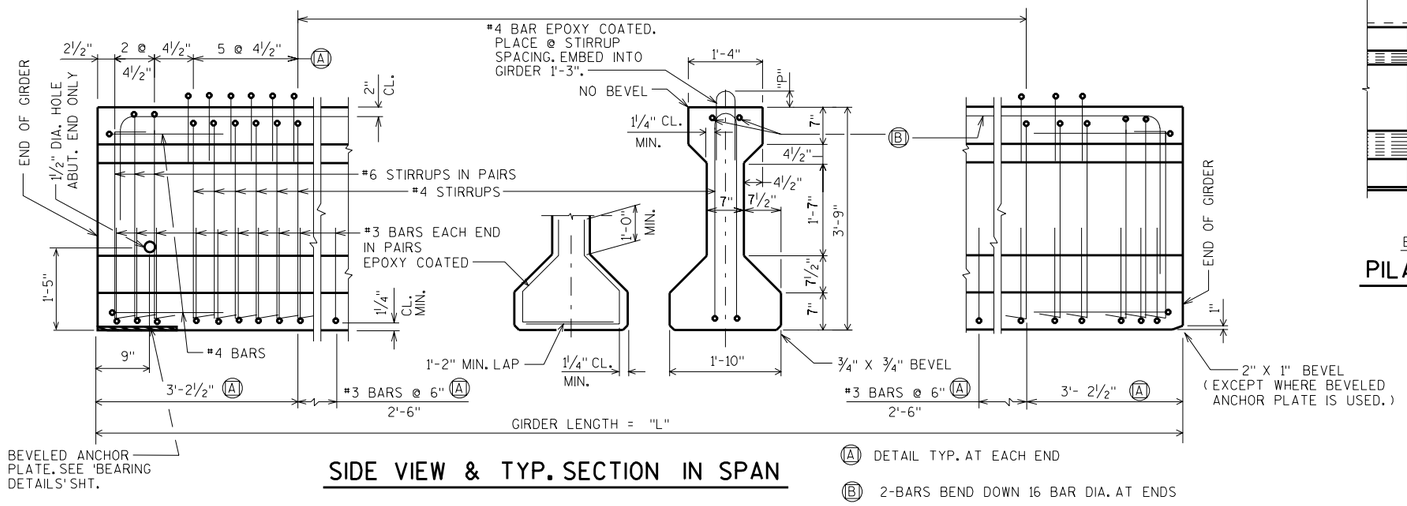
SUPERSTRUCTURE DETAILS

SHEET

FILE= G36DET.DGN
SCALE = 1 2

STATE PROJECT NUMBER

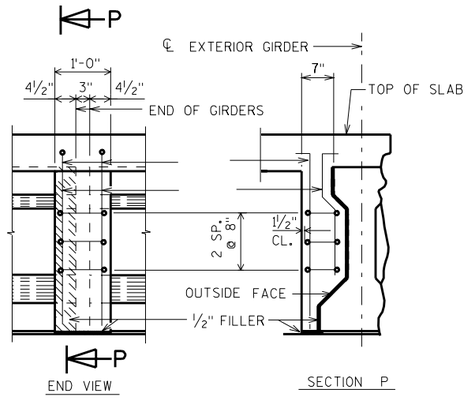
- -



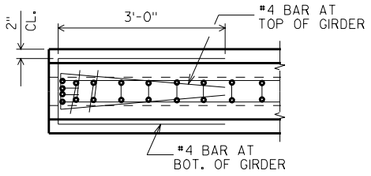
SIDE VIEW & TYP. SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

Ⓑ 2-BARS BEND DOWN 16 BAR DIA. AT ENDS



PILASTER DETAILS AT PIERS



TOP VIEW OF GIRDER ENDS

GIRDER NOTES

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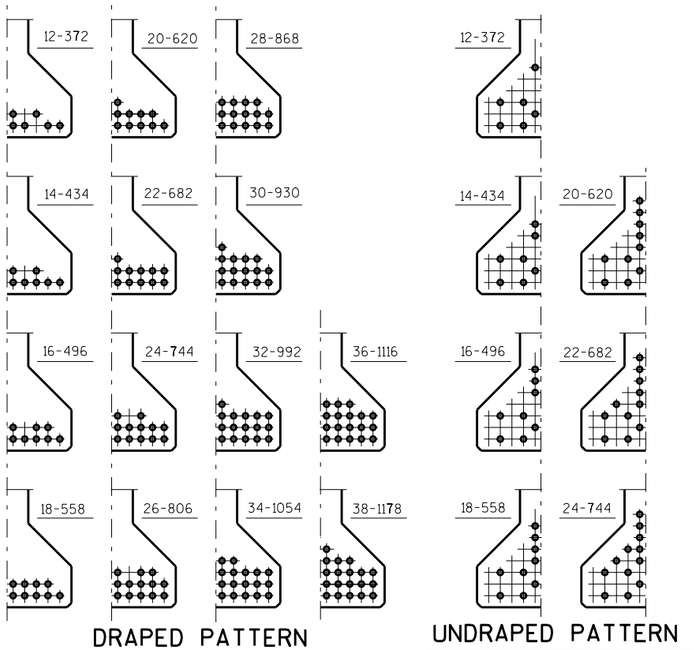
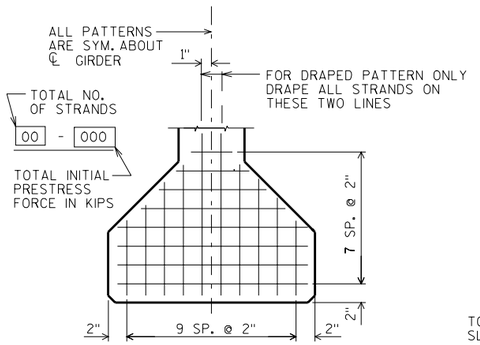
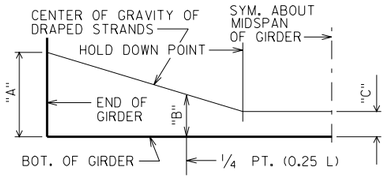
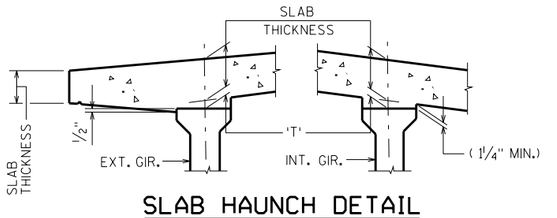




TYP. STRAND PATTERN



DRAPED STRAND PROFILE



SLAB HAUNCH DETAIL

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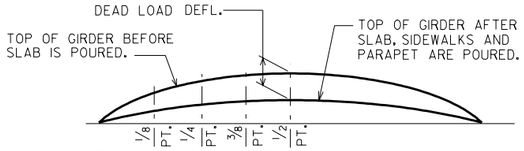


DEAD LOAD DEFLECTION DIAGRAM

✳ MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.) ⅛	¼	⅜	½	CONC. STRGTH. f'c (P.S.I.)	"P"	DIA. OF STRAND	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

45" PRESTRESSED GIRDER DETAILS

SHEET

8

LV = 12345678

FILE= G45.DGN
SCALE =
6-01

STATE PROJECT NUMBER
- -

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER.

PART LONGIT. SECTION

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

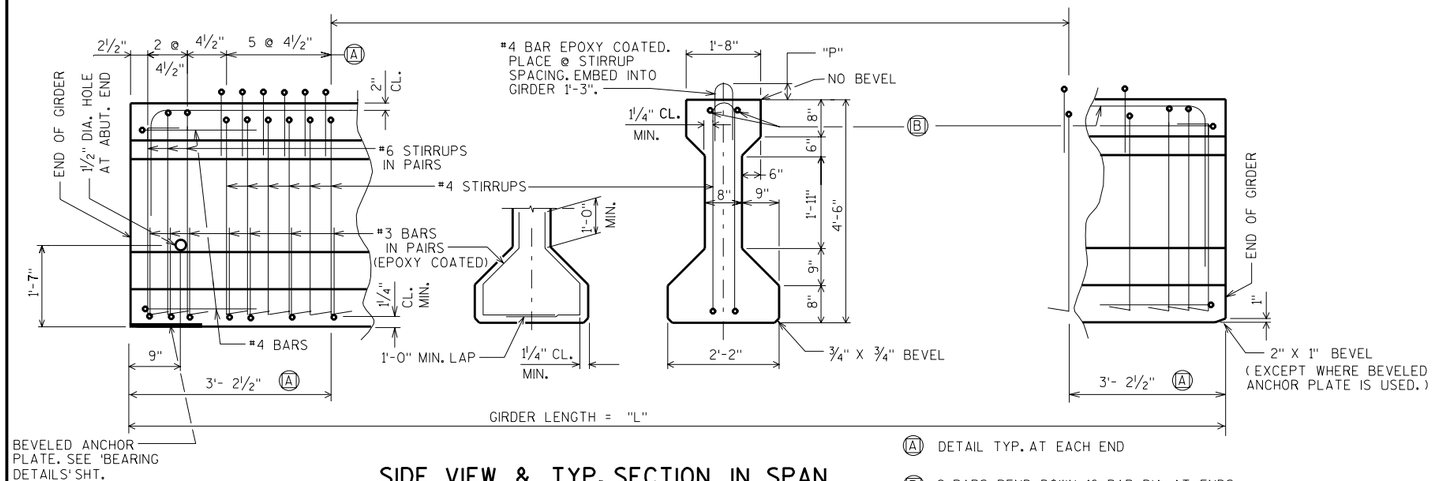
SUPERSTRUCTURE DETAILS

SHEET 8

FILE= G45DET.DGN
SCALE =
6-01

1 2

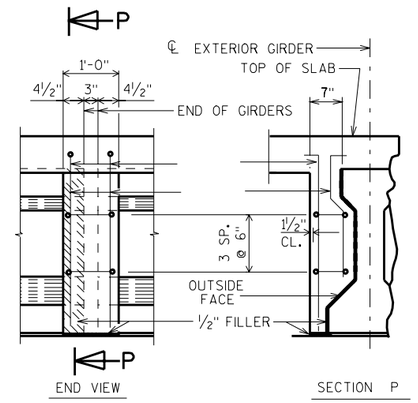
STATE PROJECT NUMBER
- -



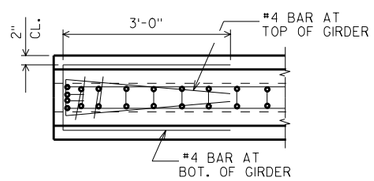
SIDE VIEW & TYP. SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

Ⓑ 2-BARS BEND DOWN 16 BAR DIA. AT ENDS



PILASTER DETAILS AT PIERS



TOP VIEW OF GIRDER ENDS

GIRDER NOTES

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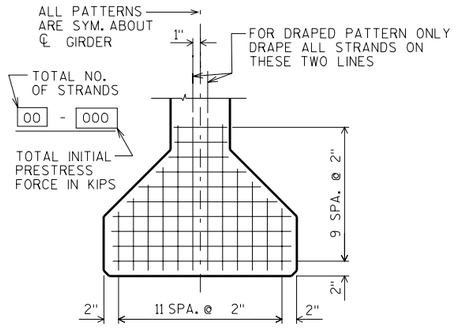
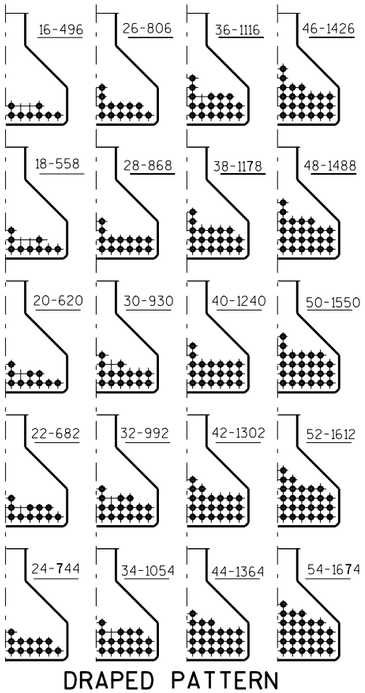
   WELDED WIRE FABRIC SHALL CONFORM TO THE REQUIREMENTS OF ASTM A497.

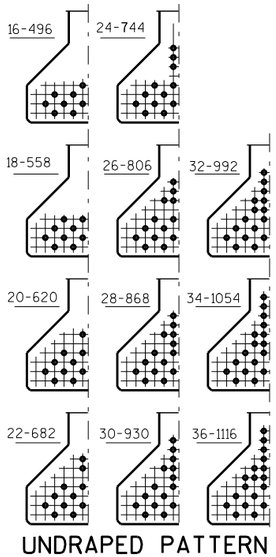
   ENDS OF STRANDS SHALL BE PAINTED WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (THIS APPLIES ONLY TO THOSE ENDS OF GIRDERS THAT ARE FINALLY EXPOSED.)



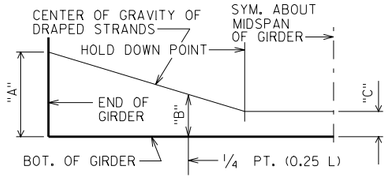
TYP. STRAND PATTERN



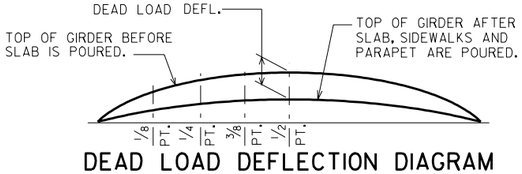
DRAPED PATTERN



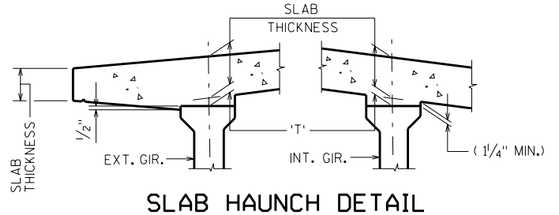
UNDRAPED PATTERN



DRAPED STRAND PROFILE



DEAD LOAD DEFLECTION DIAGRAM



SLAB HAUNCH DETAIL

IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY BRIDGE OFFICE FOR HAUNCH HEIGHTS OVER 4".

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT ⅛ POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- SLAB THICKNESS
= HAUNCH HEIGHT 'T'

✳ MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.) ⅛	¼	⅜	½	CONC. STRGTH. f'c (P.S.I.)	"P"	DRAPED PATTERN DIA. OF STRAND	TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

54" PRESTRESSED GIRDER DETAILS

SHEET 8

FILE= G54.DGN
SCALE =
6-01

LV = 1 2 3 4 5 6 7 8 9

STATE PROJECT NUMBER
- -

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER.

PART LONGIT. SECTION

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY CMPT	PLANS CK'D.

SUPERSTRUCTURE DETAILS

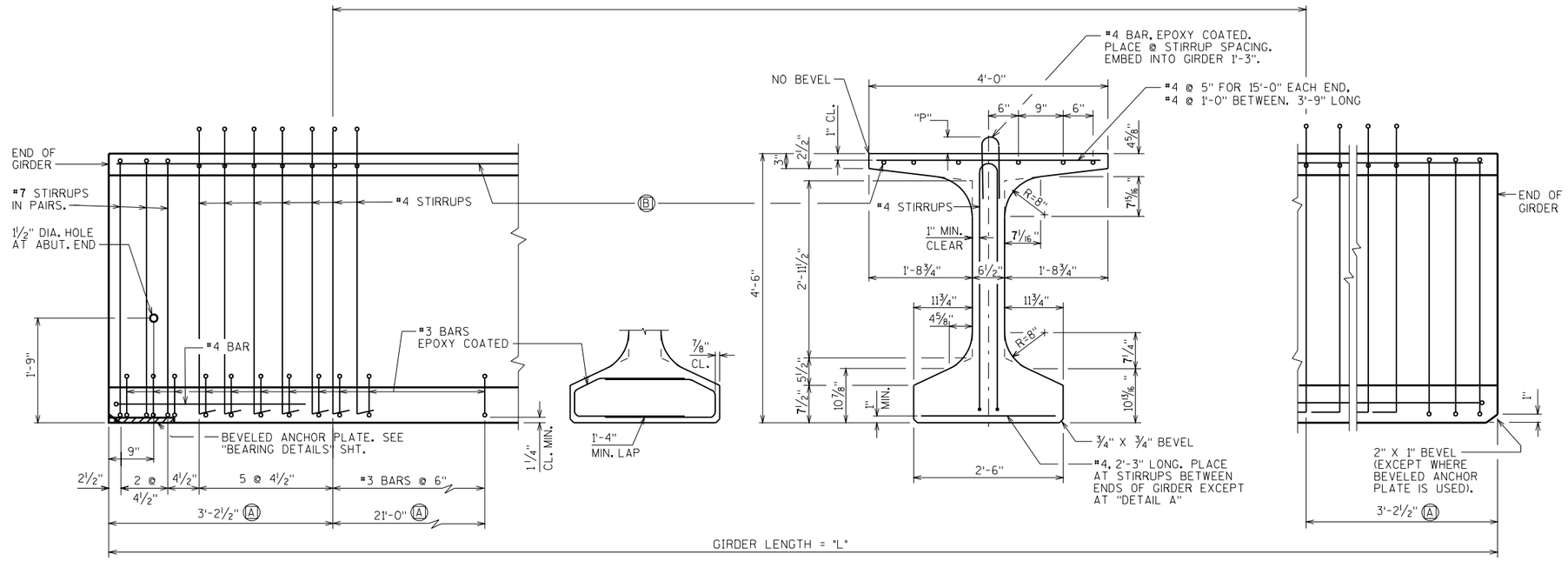
SHEET 8

FILE= G54DET.DGN
SCALE =
6-01

1 2

STATE PROJECT NUMBER

- -



SIDE VIEW & TYP. SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END

Ⓑ 6 - BARS, FULL LENGTH

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY FOR BONDING TO THE SLAB, EXCEPT THE OUTSIDE 15" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED LIQUID BOND BREAKER SHALL BE APPLIED TO THE TOP SURFACE OF THE GIRDER EXCEPT FOR THE CENTER 18". APPLY NO MORE THAN 7 DAYS PRIOR TO POURING THE DECK.

NOX-CRETE:
SILCOSEAL 2000 F (2 COATS)
MASTER BUILDERS:
FIRST COAT - PRECO FORM-COTE
SECOND COAT - RHEOFINISH 220

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

PRESTRESSING STRANDS SHALL BE 0.6"Φ - 7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI AND SHALL BE FLUSH WITH THE ENDS OF THE GIRDER.

BEND EACH END OF #4 STIRRUPS 4½" AND #7 STIRRUPS 12".

FOR DIAPHRAGM INSERT & CONNECTION DETAILS, SEE "STEEL DIAPHRAGM" SHEET.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #4 STIRRUPS, 2 OPTIONS ARE AVAILABLE:

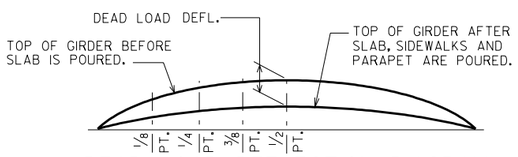
1. USE ASTM A706, GRADE 60 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.
2. USE ASTM A615, GRADE 40 REINFORCEMENT AND A MODIFIED STIRRUP SPACING SUBMITTED TO AND APPROVED BY THE STRUCTURES DEVELOPMENT SECTION.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION.

WELDED WIRE FABRIC SHALL CONFORM TO THE REQUIREMENTS OF ASTM A497.

ENDS OF STRANDS SHALL BE PAINTED WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER AT GIRDER ENDS THAT ARE EXPOSED.

TOP VIEW OF GIRDER ENDS



DEAD LOAD DEFLECTION DIAGRAM

✳ MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.) 1/8	1/4	3/8	1/2	CONC. STRGTH. f'c (P.S.I.)	"P"	DIA. OF STRAND	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

54W" PRESTRESSED GIRDER DETAILS

SHEET

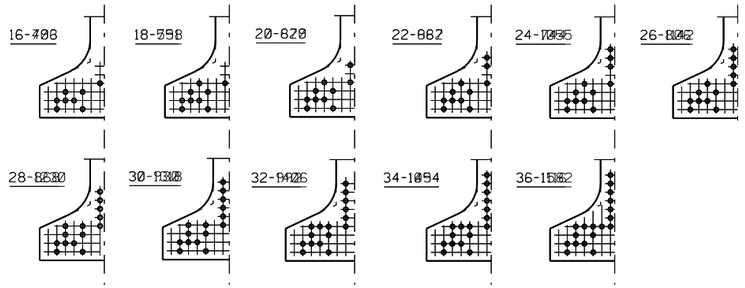
8

FILE= G54W.DGN
SCALE = 6-02

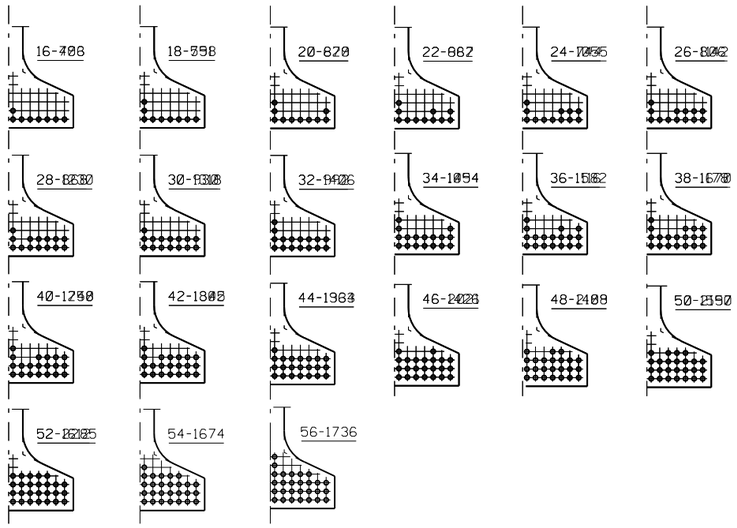
1 2 3 4 5 6 7 8 9

STATE PROJECT NUMBER

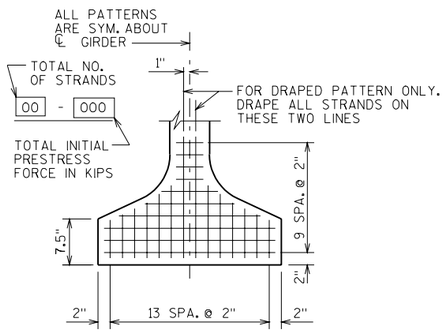
- -



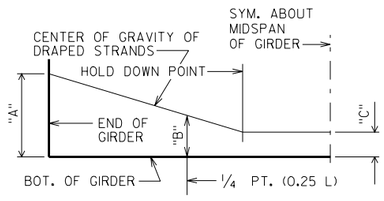
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS



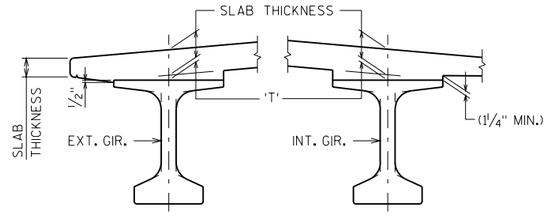
ARRANGEMENT AT ℄ SPAN - FOR GIRDERS WITH DRAPED STRANDS



TYP. STRAND PATTERN



DRAPED STRAND PROFILE



SLAB HAUNCH DETAIL

IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. IF GRADE LINE IS RAISED FROM PLAN PROFILE, CONTACT THE STRUCTURES SECTION. PLAN SLAB THICKNESS SHALL BE HELD.

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT ⅛ POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- SLAB THICKNESS
= HAUNCH HEIGHT 'T'

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

54W" PRESTRESSED GIRDER DETAILS

SHEET

FILE= C54W.DGN
SCALE = 6-02

1 2 3 4 5 6 7 8 9

BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION

△ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER.

PART LONGIT. SECTION

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996 | DRAWN BY | PLANS CK'D.

SUPERSTRUCTURE DETAILS

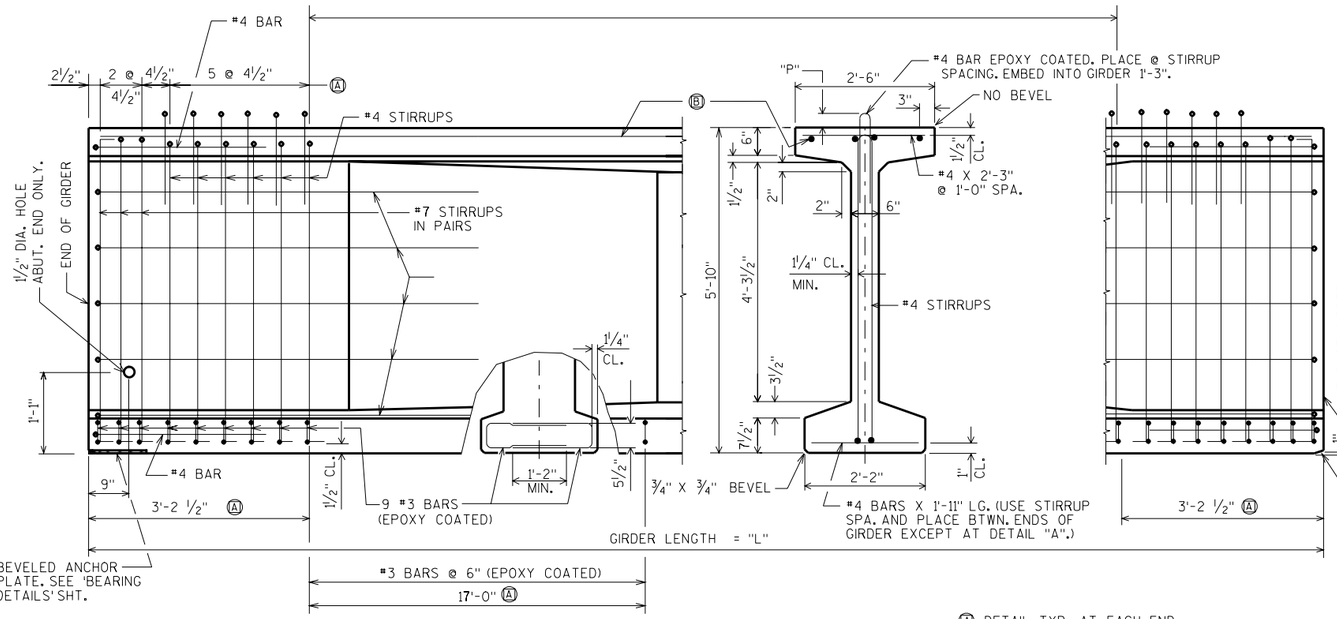
SHEET

FILE= G54WDET.DGN
SCALE =
01-02

12

STATE PROJECT NUMBER

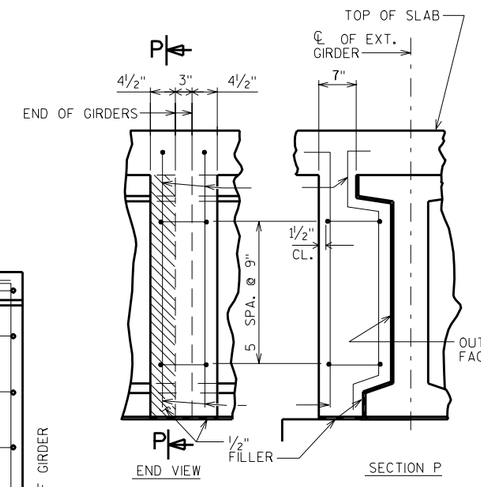
- -



SIDE VIEW & TYPICAL SECTION IN SPAN

Ⓐ DETAIL TYP. AT EACH END.

Ⓑ 4 - BARS, FULL LENGTH



PILASTER DETAILS AT PIERS

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY, EXCEPT THE OUTSIDE 2" OF GIRDER, WHICH SHALL BE TROWEL FINISHED.

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

PRESTRESSING STRANDS SHALL BE 0.5"ϕ - 7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI AND SHALL BE FLUSH WITH THE ENDS OF THE GIRDER.

BEND EACH END OF #4 STIRRUPS 4½", #7 STIRRUP 12".

FOR DIAPHRAGM INSERT & CONNECTION DETAILS SEE "STEEL DIAPHRAGM" SHEET.

ON MULTIPLE SPAN STRUCTURES, SET THE END BLOCK LENGTHS OF GIRDERS RESTING ON THE SAME PIER TO ± 2". ON SIMPLE SPANS, SET THE END BLOCK LENGTH ON BOTH GIRDER ENDS TO ± 2".

IF THE CONTRACTOR USES BOTTOM FLANGE TO SUPPORT CONSTRUCTION FORMS, THE CONTRACTOR SHALL SUBMIT FALSEWORK PLANS FOR APPROVAL OF THE STRUCTURES DESIGN SECTION.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

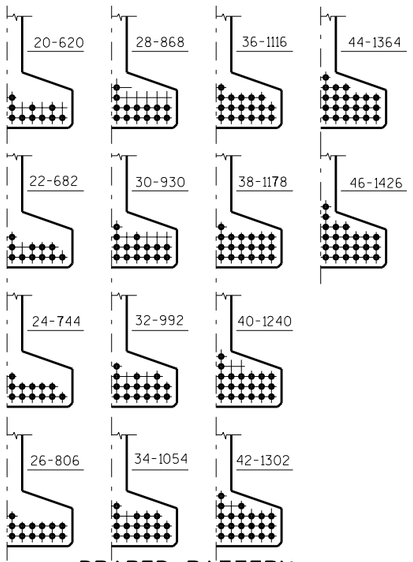
SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #4 STIRRUPS, 2 OPTIONS ARE AVAILABLE:

1. USE ASTM A706, GRADE 60 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.
2. USE ASTM A615, GRADE 40 REINFORCEMENT AND A MODIFIED STIRRUP SPACING SUBMITTED TO AND APPROVED BY THE STRUCTURES DEVELOPMENT SECTION.

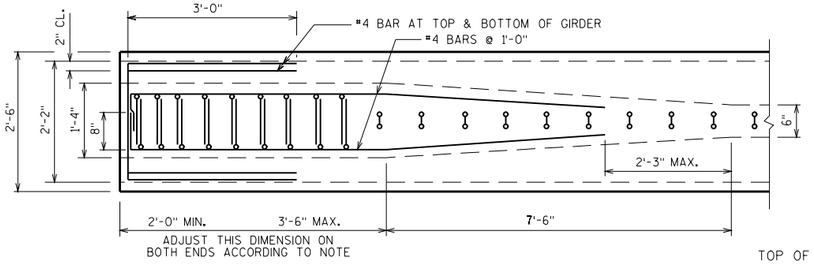
AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION.

WELDED WIRE FABRIC SHALL CONFORM TO THE REQUIREMENTS OF ASTM A497.

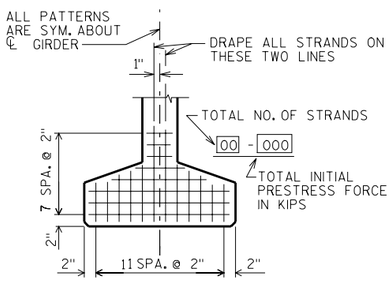
ENDS OF STRANDS SHALL BE PAINTED WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. (THIS APPLIES ONLY TO THOSE ENDS OF GIRDERS THAT ARE FINALLY EXPOSED.)



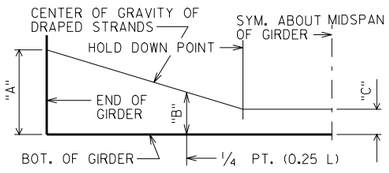
DRAPED PATTERN



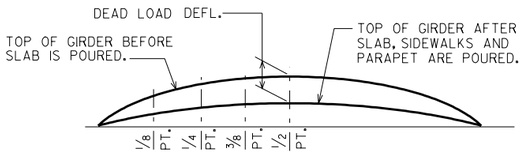
TOP VIEW OF GIRDER Ⓐ



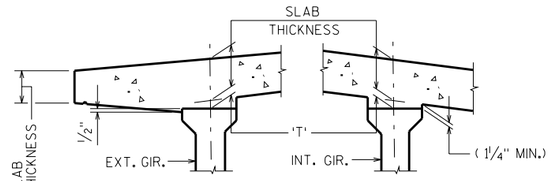
TYP STRAND PATTERN



DRAPED STRAND PROFILE



DEAD LOAD DEFLECTION DIAGRAM



SLAB HAUNCH DETAIL

IF 1¼" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. THE PLAN SLAB THICKNESS SHALL BE HELD. NOTIFY BRIDGE OFFICE FOR HAUNCH HEIGHTS OVER 4".

TO DETERMINE 'T' ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT ⅛ POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- SLAB THICKNESS
= HAUNCH HEIGHT 'T'

✳ MINIMUM CYLINDER STRENGTH OF CONCRETE @ TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.) ⅛	¼	⅜	½	CONC. STRGTH. f'c (P.S.I.)	"P"	DIA. OF STRAND	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

70" PRESTRESSED GIRDER DETAILS

SHEET

8

LV=12 45678

FILE= G70.DGN
SCALE = 7-01

STATE PROJECT NUMBER
- -

PART. LONGIT. SECTION

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER.

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

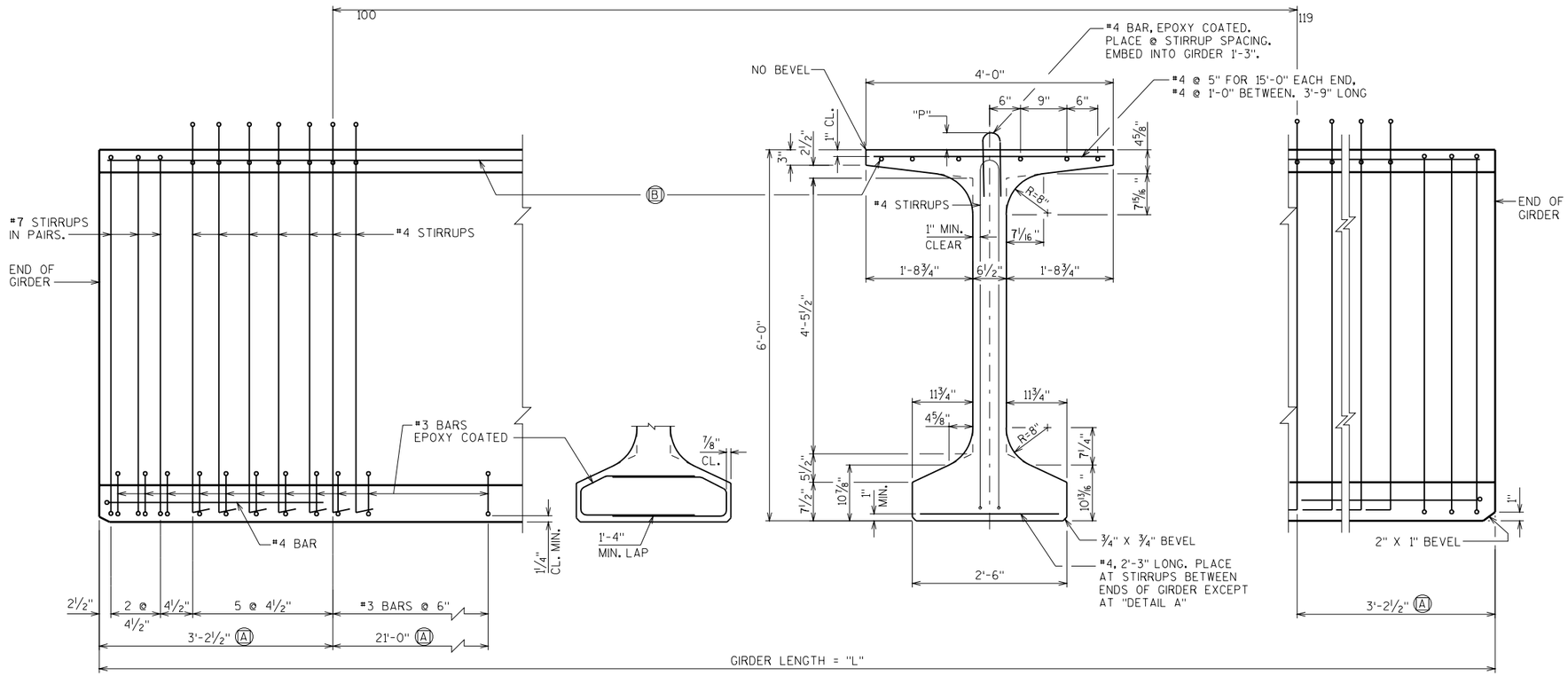
CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

SUPERSTRUCTURE DETAILS

SHEET

FILE= G7DET.DGN
SCALE =
6-01

STATE PROJECT NUMBER
- -

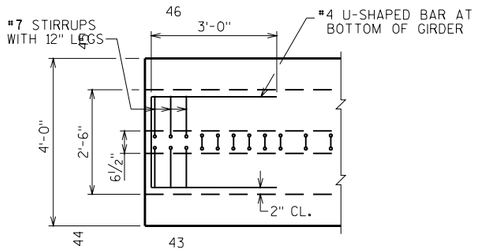


SIDE VIEW & TYP. SECTION IN SPAN

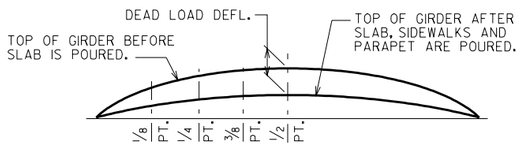
Ⓐ DETAIL TYP. AT EACH END

Ⓑ 6 - BARS, FULL LENGTH

120



TOP VIEW OF GIRDER ENDS



DEAD LOAD DEFLECTION DIAGRAM

✳ MINIMUM CYLINDER STRENGTH OF CONCRETE AT TIME OF TRANSFER OF PRESTRESS FORCE.

GIRDER DATA

SPAN	GIRDER LENGTH "L"	DEAD LOAD DEFL. (IN.) ⅛	¼	⅜	½	CONC. STRGTH. F'C (P.S.I.)	"P"	DIA. OF STRAND	DRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳	(IN.) "A"	"B" MIN.	"B" MAX.	"C"	UNDRAPED PATTERN TOTAL NO. OF STRANDS	f'ci (P.S.I.) ✳
3	4	5	6	7	8	9	10	24	11	12	13	14	15	16	17	18
19																

GIRDER NOTES

TOP OF GIRDER TO BE ROUGH FLOATED AND BROOMED TRANSVERSELY FOR BONDING TO THE SLAB, EXCEPT THE OUTSIDE 15" OF GIRDER, WHICH SHALL RECEIVE A SMOOTH FINISH. AN APPROVED LIQUID BOND BREAKER SHALL BE APPLIED TO THE TOP SURFACE OF THE GIRDER EXCEPT FOR THE CENTER 18". APPLY NO MORE THAN 7 DAYS PRIOR TO POURING THE DECK.

NOX-CRETE:
SILCOSEAL 2000 F (2 COATS)
MASTER BUILDERS:
FIRST COAT - PRECO FORM-COTE
SECOND COAT - RHEOFINISH 220

THE GIRDERS SHALL BE PROVIDED WITH A SUITABLE LIFTING DEVICE FOR HANDLING AND ERECTING THE GIRDERS.

PRESTRESSING STRANDS SHALL BE 0.5"Φ - 7 WIRE LOW-RELAXATION STRANDS WITH AN ULTIMATE STRENGTH OF 270,000 PSI AND SHALL BE FLUSH WITH THE ENDS OF THE GIRDER.

BEND EACH END OF #4 STIRRUPS 4½" AND #7 STIRRUPS 12".

FOR DIAPHRAGM INSERT & CONNECTION DETAILS, SEE "STEEL DIAPHRAGM" SHEET.

ALL GIRDERS SHALL BE CAST FULL LENGTH AS SHOWN.

SPACING SHOWN FOR #4 STIRRUPS IS FOR GRADE 60 REINFORCEMENT. IF THE FABRICATOR WANTS TO BUILD A BAR STEEL CAGE BY WELDING LONGITUDINAL REINFORCEMENT TO THE #4 STIRRUPS, 2 OPTIONS ARE AVAILABLE:

1. USE ASTM A706, GRADE 60 REINFORCEMENT AND THE STIRRUP SPACING AS SHOWN ON THE PLANS.
2. USE ASTM A615, GRADE 40 REINFORCEMENT AND A MODIFIED STIRRUP SPACING SUBMITTED TO AND APPROVED BY THE STRUCTURES DEVELOPMENT SECTION.

AN ALTERNATE EQUIVALENT OF WELDED WIRE FABRIC (WWF) MAY BE SUBSTITUTED FOR THE STIRRUP REINFORCEMENT SHOWN, UPON APPROVAL OF THE STRUCTURES DEVELOPMENT SECTION.

WELDED WIRE FABRIC SHALL CONFORM TO THE REQUIREMENTS OF ASTM A497.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE 67

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

72W" PRESTRESSED GIRDER DETAILS

SHEET 8

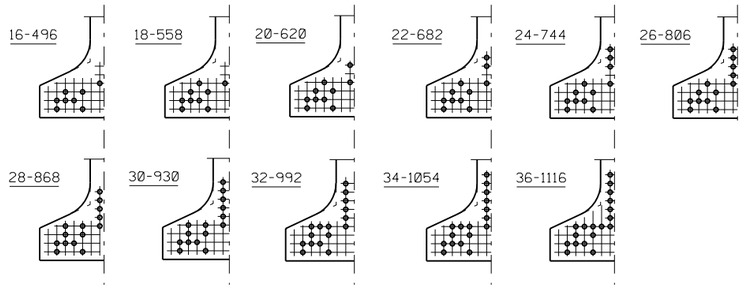
LV = 1 2 3 4 8 18

FILE= G72W.DGN
SCALE =
11-02

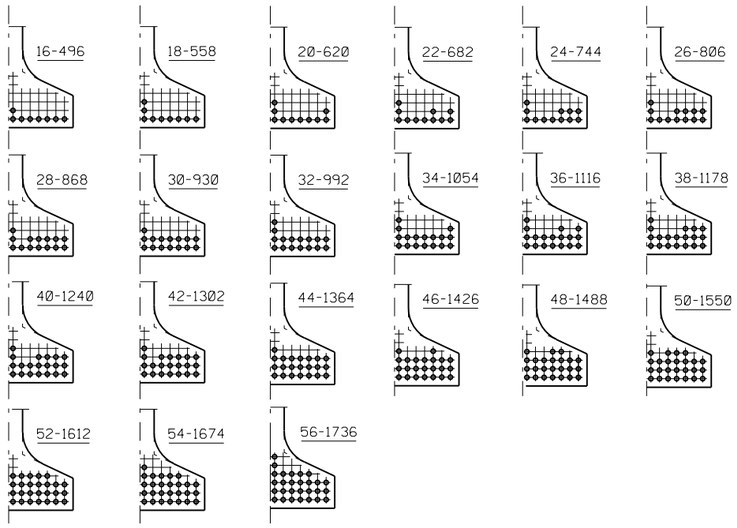
68

STATE PROJECT NUMBER

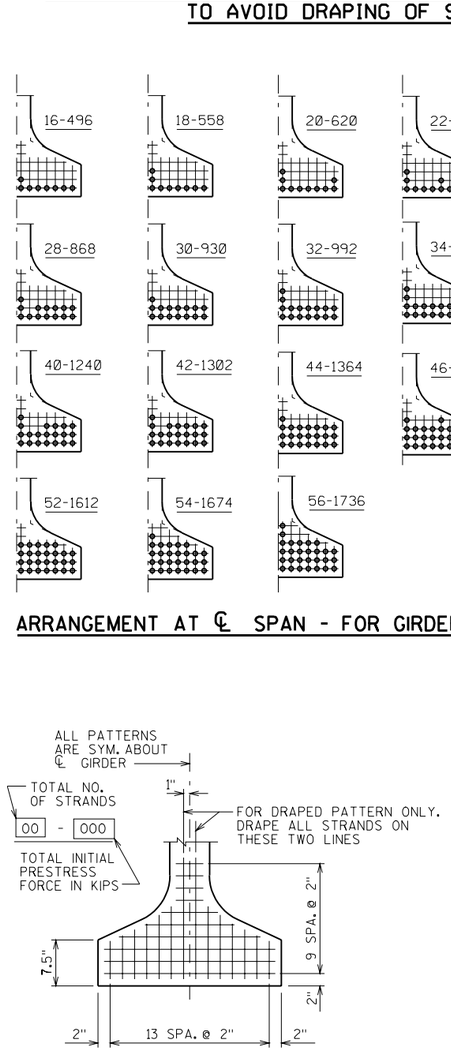
- -



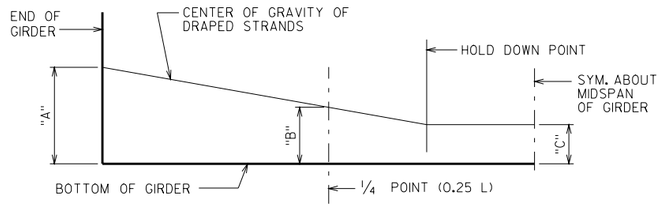
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS



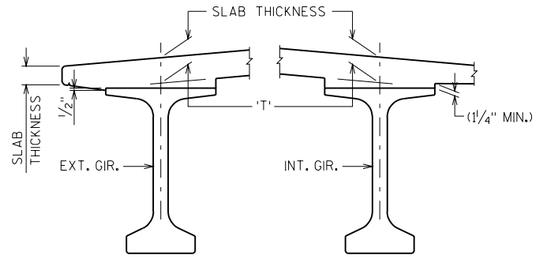
ARRANGEMENT AT ℄ SPAN - FOR GIRDERS WITH DRAPED STRANDS



TYP. STRAND PATTERN



DRAPED STRAND PROFILE



SLAB HAUNCH DETAIL

IF 1 1/4" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. IF GRADE LINE IS RAISED FROM PLAN PROFILE, CONTACT THE STRUCTURES SECTION. PLAN SLAB THICKNESS SHALL BE HELD.

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 1/8 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- SLAB THICKNESS
= HAUNCH HEIGHT 'T'

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE 69

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

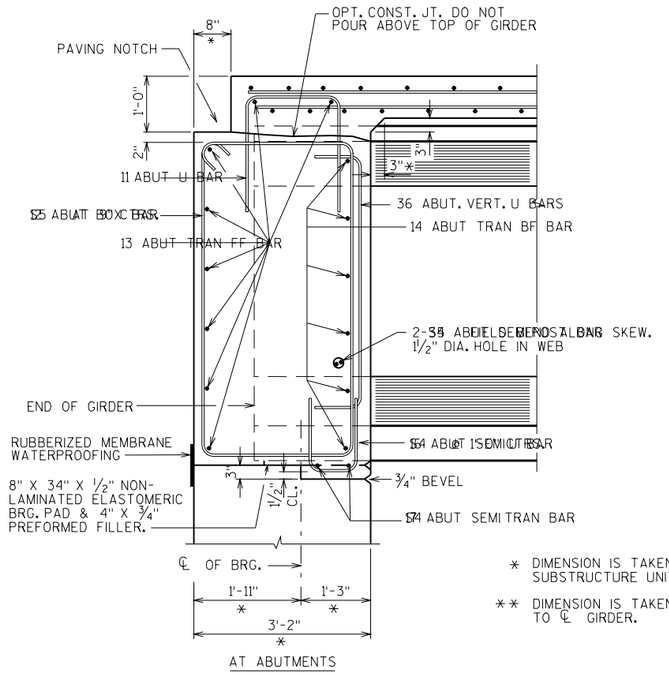
72W" PRESTRESSED GIRDER DETAILS

SHEET

FILE= G72W.DGN
SCALE =
11-02

LV = 1 2 3 4 8

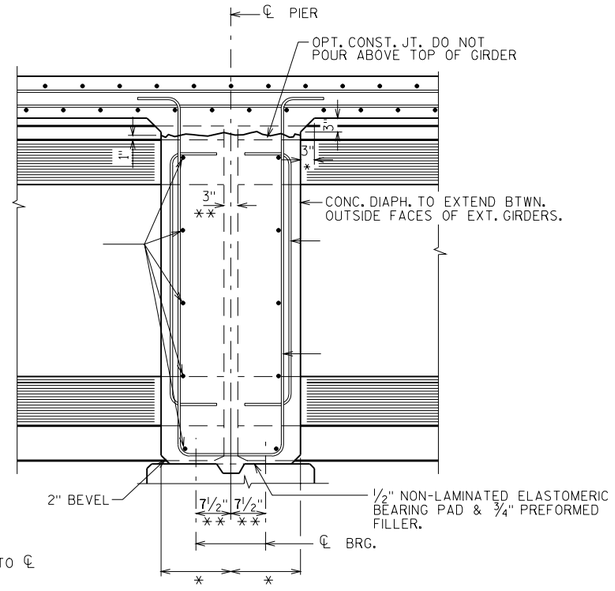
STATE PROJECT NUMBER
- -



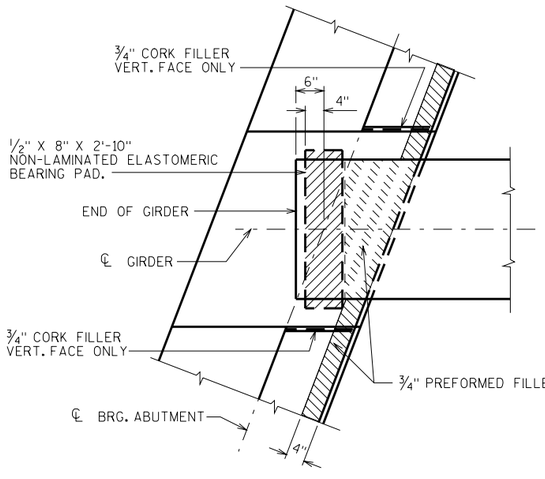
PART LONGIT. SECTION

* DIMENSION IS TAKEN NORMAL TO ℄ SUBSTRUCTURE UNITS.

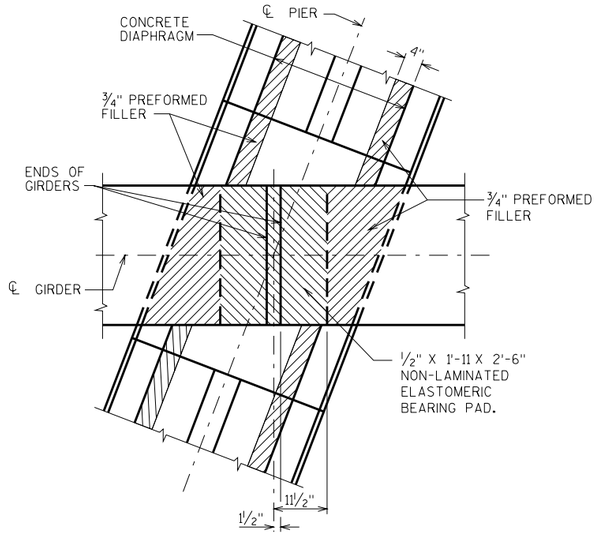
** DIMENSION IS TAKEN PARALLEL TO ℄ GIRDER.



AT PIER DIAPHRAGM



BEARING PAD DETAIL



NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

SUPERSTRUCTURE DETAILS

SHEET 8

FILE= G72WDET.DGN
SCALE =
11-02

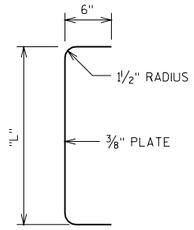
1 2 3 4 6 7 11 15

STATE PROJECT NUMBER

- -

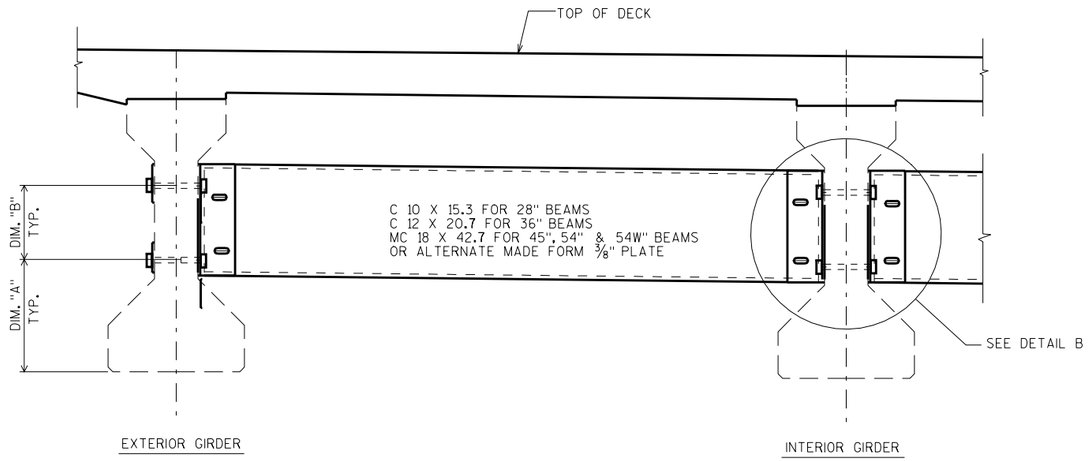
TABLE

GIRDER HEIGHT	DIM. "A"	DIM. "B"	DIM. "L"	* DIM. "X"
28"	1'-0 7/8"	5 7/8"	9 1/2"	2 1/4"
36"	1'-2 7/8"	9 7/8"	1'-1 1/2"	3 1/4"
45"	1'-5 3/8"	1'-1 7/8"	1'-5 1/2"	2 1/4"
54"	1'-7 7/8"	1'-5 7/8"	1'-9 1/2"	4 1/4"
54W"	1'-9 1/8"	1'-5 7/8"	1'-9 1/2"	4 1/4"



SECTION THRU ALTERNATE DIAPHRAGM

*DIM "X" = 2 1/2" FOR ALTERNATE PLATE DIAPHRAGM



PART TRANSVERSE SECTION AT DIAPHRAGM

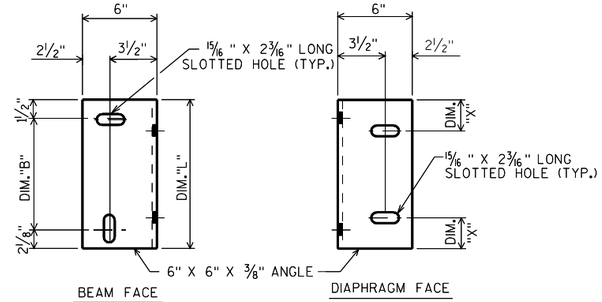
NOTES

ALL DIAPHRAGM MATERIAL AND CORED HOLES SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGM", STRUCTURE, EACH.

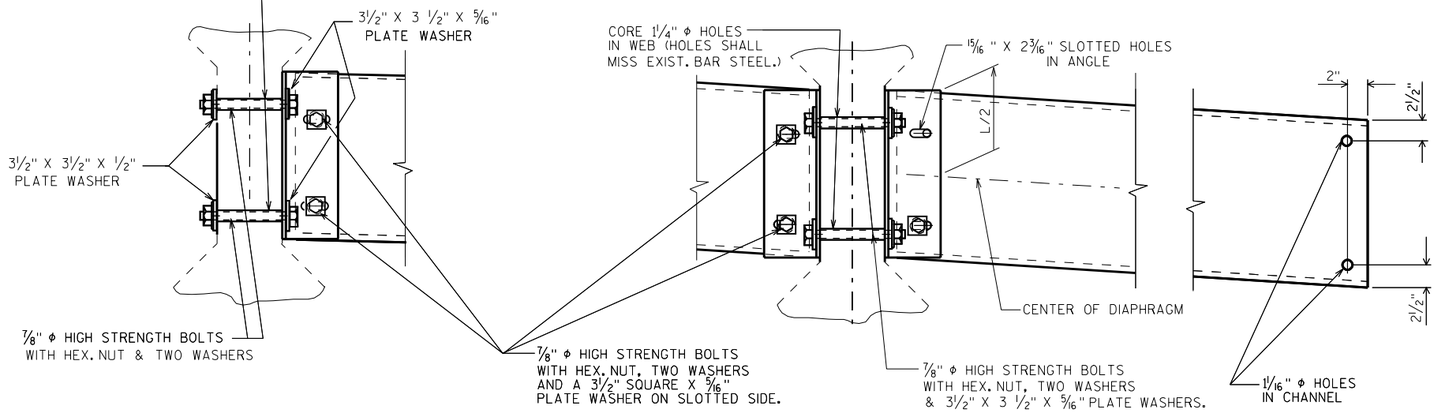
EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZE IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.



DIAPHRAGM SUPPORT



DETAIL B

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

STEEL DIAPHRAGM

SHEET

8

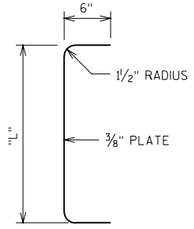
FILE= GSDIAMT.DGN
SCALE =
6-00

STATE PROJECT NUMBER

- -

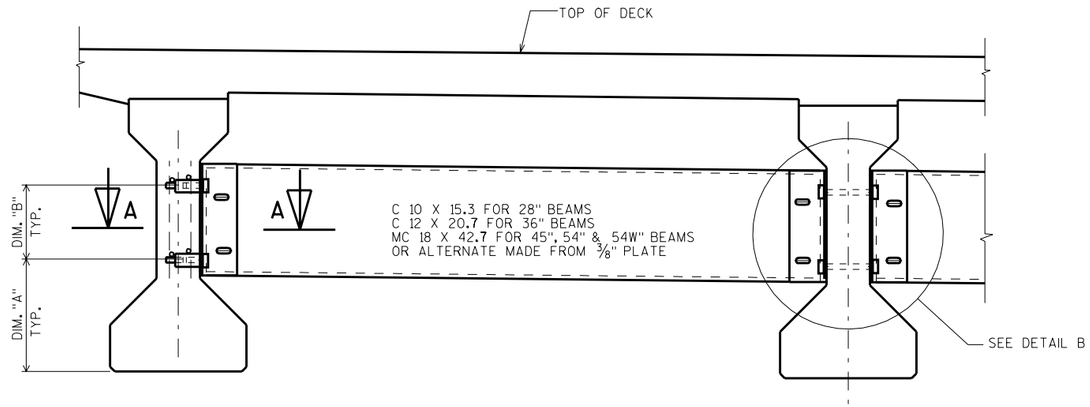
TABLE

GIRDER HEIGHT	DIM. "A"	DIM. "B"	DIM. "L"	* DIM. "X"
28"	1'-0 7/8"	5 7/8"	9 1/2"	2 1/4"
36"	1'-2 7/8"	9 7/8"	1'-1 1/2"	3 1/4"
45"	1'-5 3/8"	1'-1 7/8"	1'-5 1/2"	2 1/4"
54"	1'-7 7/8"	1'-5 7/8"	1'-9 1/2"	4 1/4"
54W"	1'-9 1/8"	1'-5 7/8"	1'-9 1/2"	4 1/4"



SECTION THRU ALTERNATE DIAPHRAGM

*DIM "X" = 2 1/2" FOR ALTERNATE PLATE DIAPHRAGM



NOTES

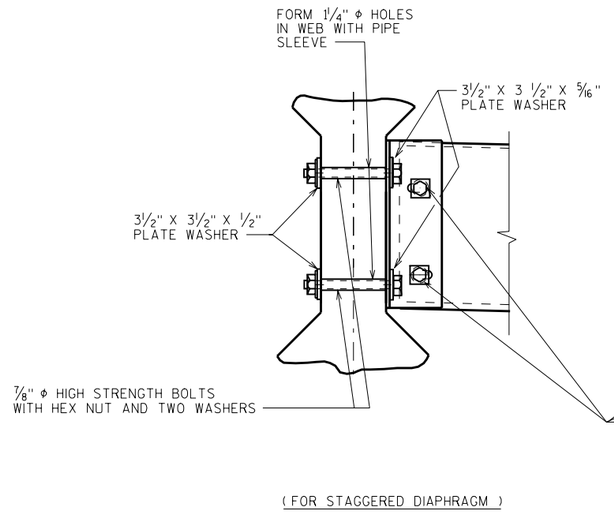
ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGM", STRUCTURE, EACH.

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

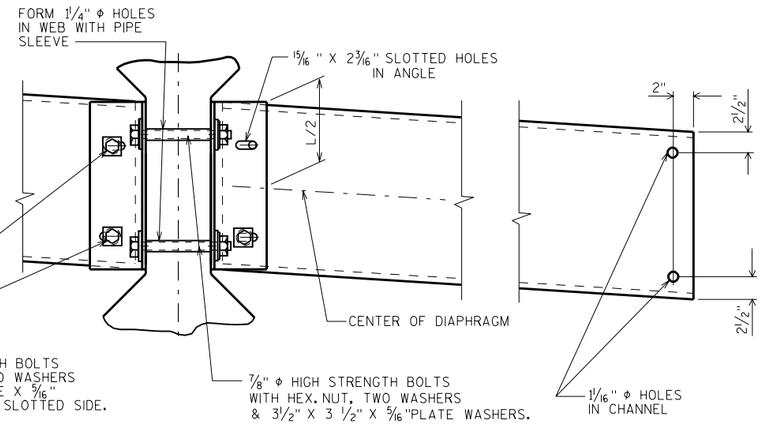
ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZE IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563, LUBRICANT AND TEST FOR COATED NUTS.

PART TRANSVERSE SECTION AT DIAPHRAGM

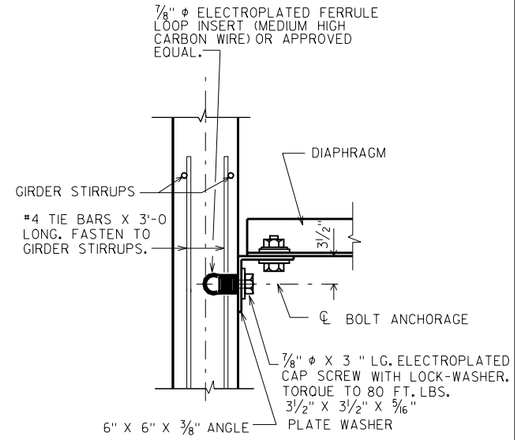


(FOR STAGGERED DIAPHRAGM)



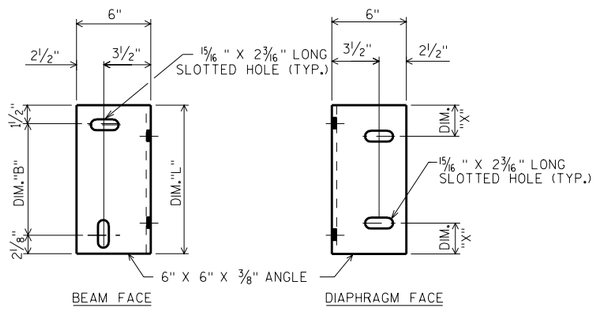
(FOR CONTINUOUS LINE OF DIAPHRAGMS)

DETAIL B



SECT. A-A

(FOR EXTERIOR ATTACHMENT)



DIAPHRAGM SUPPORT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

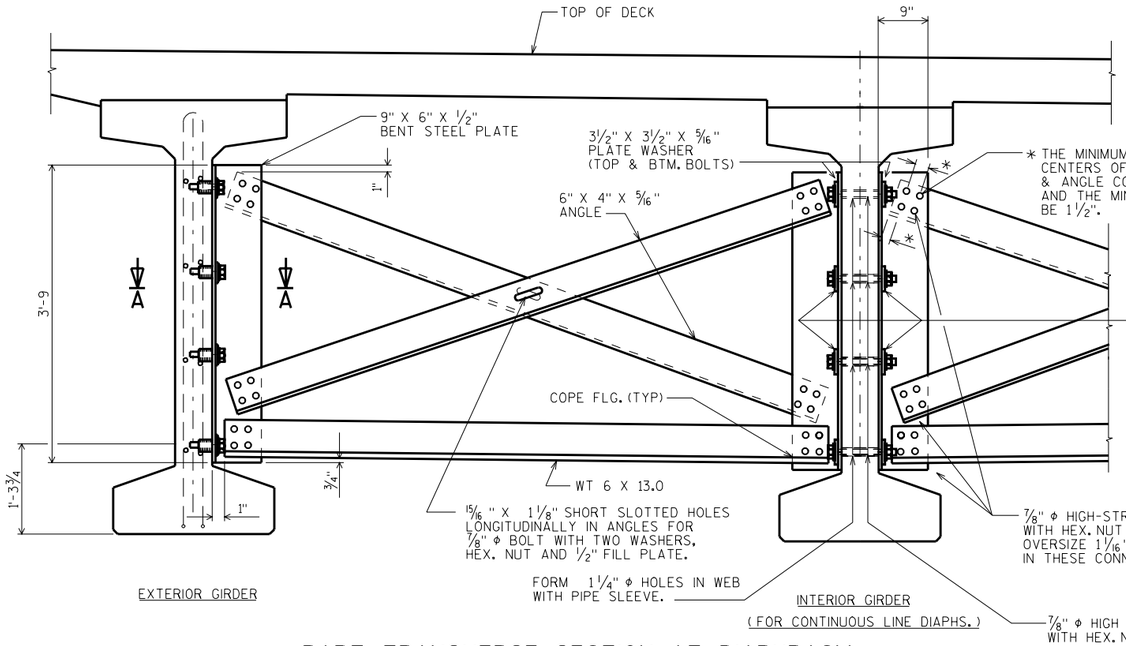
STEEL DIAPHRAGM

SHEET

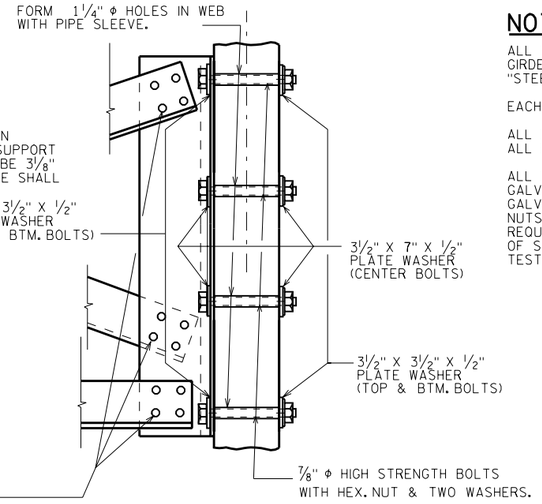
8

FILE= GSTDIA.DGN
SCALE =
6-00

STATE PROJECT NUMBER
- -



PART TRANSVERSE SECTION AT DIAPHRAGM



SECTION AT INTERIOR GIRDERS (FOR STAGGERED DIAPHRAGMS)

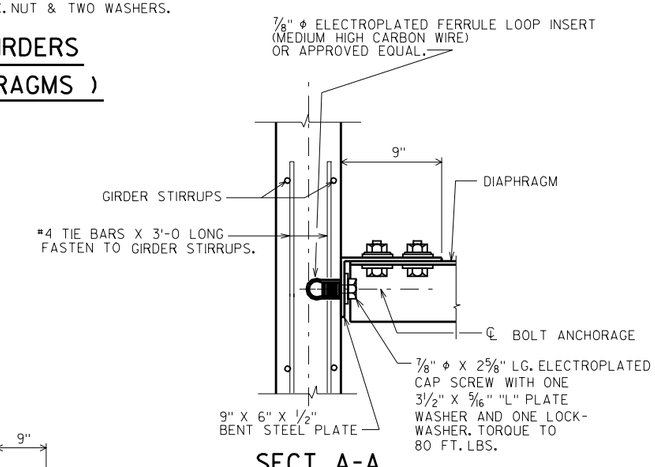
NOTES

ALL DIAPHRAGM MATERIAL NOT EMBEDDED IN THE CONCRETE GIRDER SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "STEEL DIAPHRAGM".

EACH DIAPHRAGM BETWEEN GIRDERS SHALL CONSTITUTE ONE UNIT.

ALL DIAPHRAGM STRUCTURAL STEEL SHALL BE ASTM A709 GRADE 36. ALL BOLTS, NUTS AND WASHERS SHALL BE ASTM A325 TYPE 1.

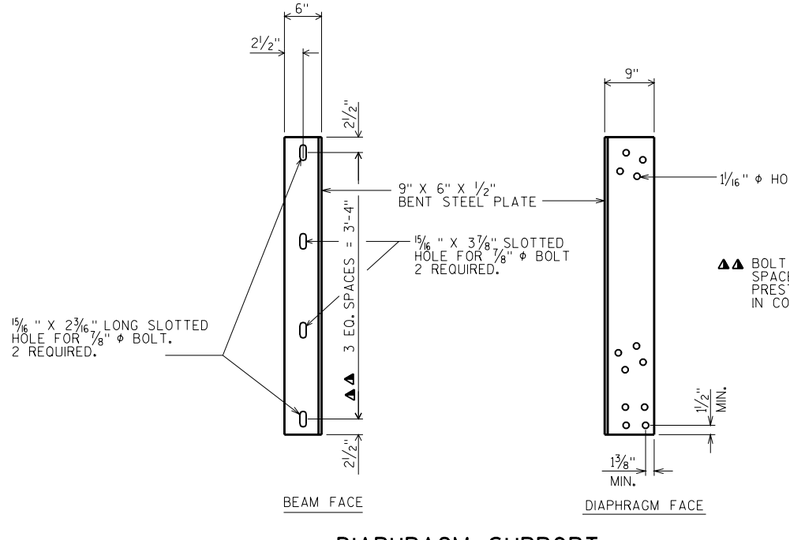
ALL DIAPHRAGM STRUCTURAL STEEL SHOWN SHALL BE HOT-DIPPED GALVANIZED. ALL BOLTS, NUTS AND WASHERS SHALL BE HOT-DIPPED GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C. GALVANIZED NUTS SHALL BE TAPPED OVERSIZE IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A563 AND SHALL MEET THE REQUIREMENTS OF SUPPLEMENTARY REQUIREMENT S1 OF ASTM A563. LUBRICANT AND TEST FOR COATED NUTS.



SECT. A-A

(FOR EXTERIOR ATTACHMENT)

"L" = 3 1/2"; TOP AND BOTTOM BOLTS
"L" = 7"; CENTER BOLTS



▲▲ BOLT HOLES SHALL BE SPACED SO AS TO MISS PRESTRESSED STRANDS IN CONCRETE BEAMS.

DIAPHRAGM SUPPORT

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

STEEL DIAPHRAGM

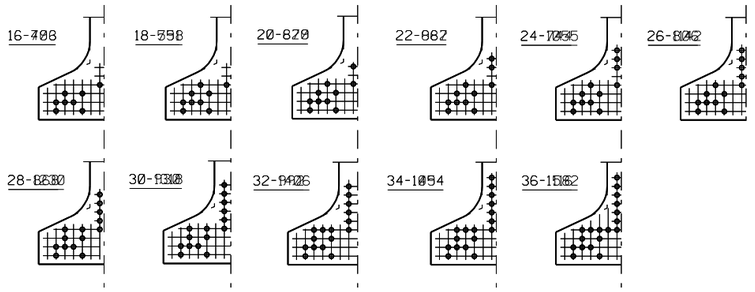
SHEET 8

FILE= GSTDIA70.DGN
SCALE = 1-03

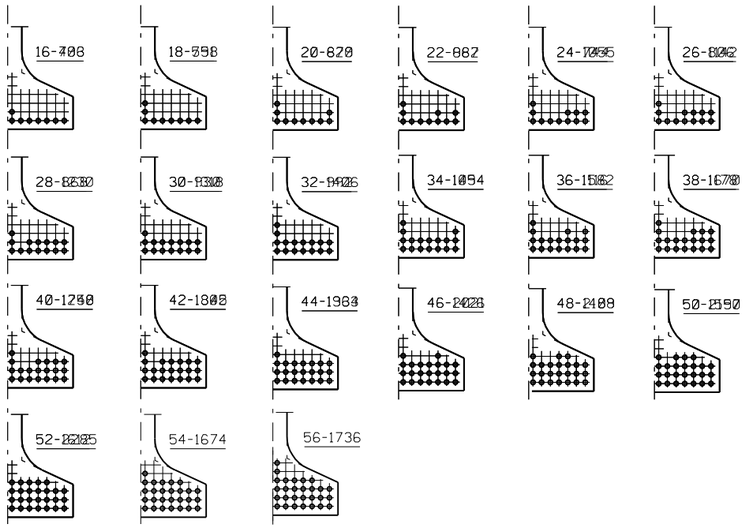
1 2 3

STATE PROJECT NUMBER

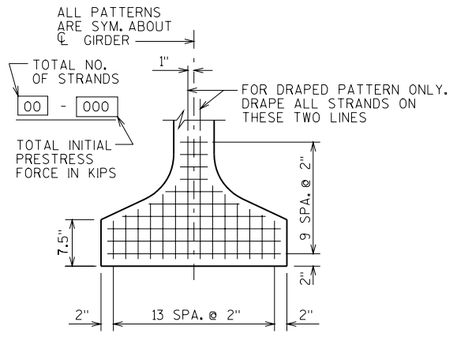
- -



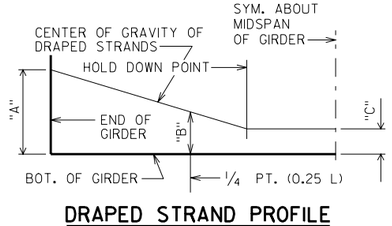
STANDARD ARRANGEMENTS TO RAISE CENTER OF GRAVITY TO AVOID DRAPING OF STRANDS



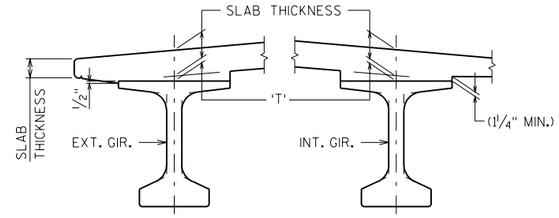
ARRANGEMENT AT ℄ SPAN - FOR GIRDERS WITH DRAPED STRANDS



TYP. STRAND PATTERN



DRAPED STRAND PROFILE



SLAB HAUNCH DETAIL

IF 1 1/4" MINIMUM HAUNCH HEIGHT AT EDGE OF GIRDER CANNOT BE MAINTAINED, THE GRADE LINE MAY BE REVISED BY THE ENGINEER AT THE OPTION OF THE CONTRACTOR. IF GRADE LINE IS RAISED FROM PLAN PROFILE, CONTACT THE STRUCTURES SECTION. PLAN SLAB THICKNESS SHALL BE HELD.

TO DETERMINE 'T', ELEV. OF TOP OF GIR'S. AT ℄ OF SUBSTRUCTURE UNITS & AT 1/8 POINTS OF EACH SPAN SHALL BE TAKEN. THEN FOLLOW THIS PROCESS:

TOP OF DECK ELEV. AT FINAL GRADE
- TOP OF GIRDER ELEVATION
+ DEAD LOAD DEFLECTION
- SLAB THICKNESS
= HAUNCH HEIGHT 'T'

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

54W" PRESTRESSED GIRDER DETAILS

SHEET

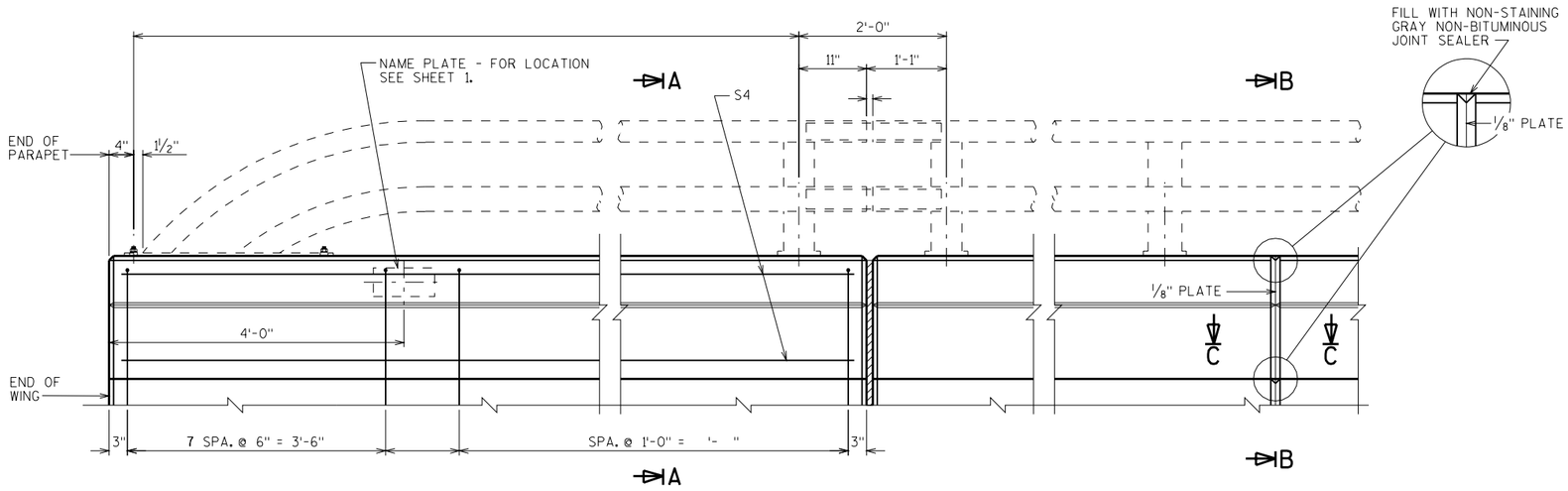
8

18

1 2 3 4 5 6 7 8 9

6" FILE= 654W.DGN
6"-02 SCALE =

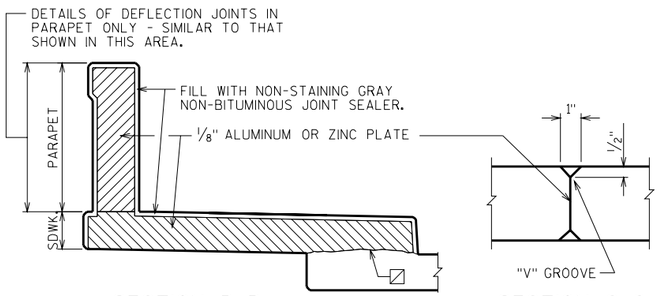
STATE PROJECT NUMBER
- -



AT ABUTMENTS

AT DEFLECTION JOINT

ELEVATION OF PARAPET

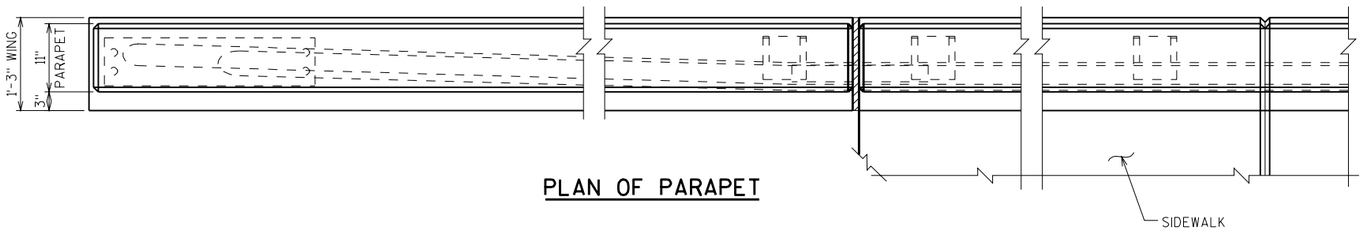


SECTION B-B

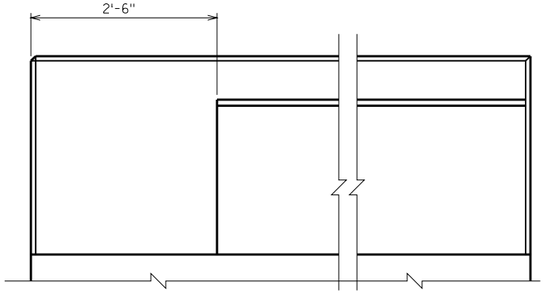
SECTION C-C

(SHOWING DEFLECTION JOINT IN PARAPET AND SIDEWALK.)

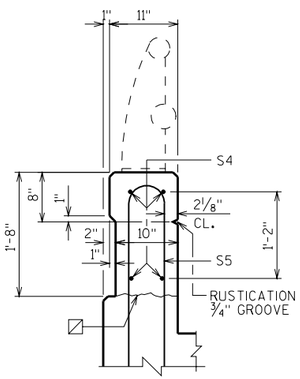
WHEN PARAPETS ARE POURED CONTINUOUSLY FROM END TO END, THEY SHALL BE SEPARATED AT THE DEFLECTION JOINTS BY A PIECE OF 1/8" ZINC OR ALUMINUM PLATE CUT AS SHOWN IN SECTION B-B BY SHADED AREA. IF CONSTRUCTION JOINTS IN PARAPETS ARE USED AT THE DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH BITUMINOUS PAINT AND PLATE SEPARATORS MAY BE OMITTED.



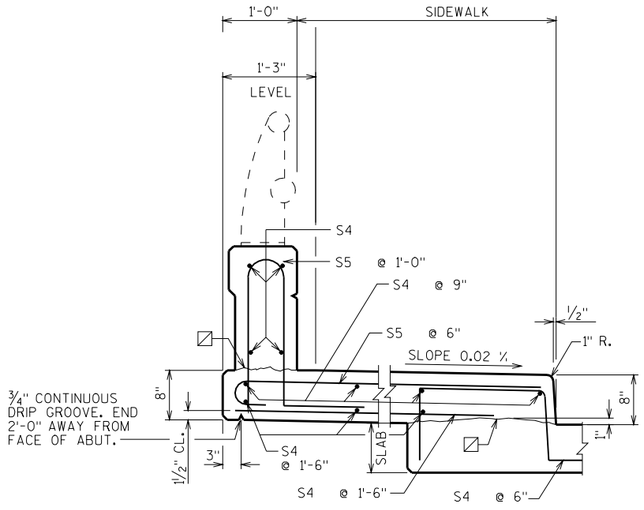
PLAN OF PARAPET



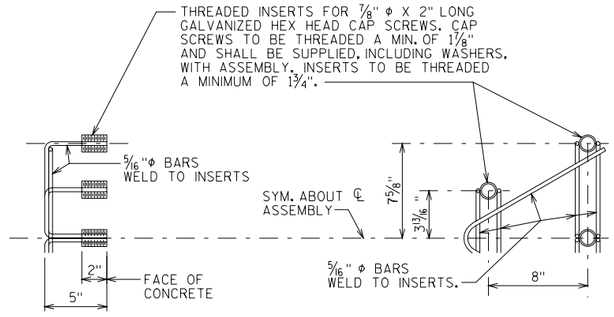
FRONT FACE OF PARAPET



SECTION A-A



AT SIDEWALK



DETAIL OF ANCHOR ASEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLY FOR BEAM GUARD", EACH.

HORIZ. CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

VERTICAL FACE PARAPET "A"

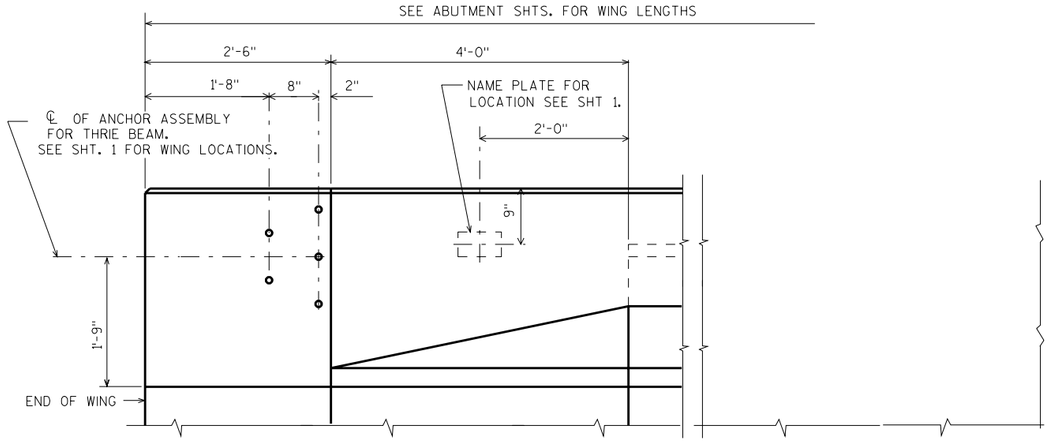
SHEET

8

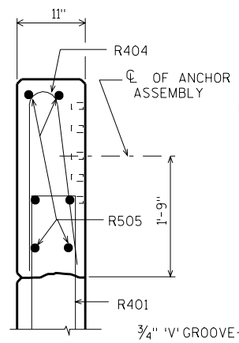
1234

FILE= PPTA.DGN
SCALE =
7-02

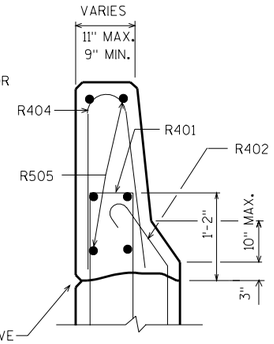
STATE PROJECT NUMBER
- -



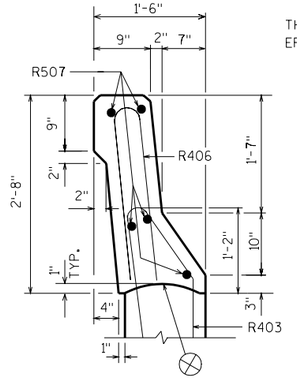
INSIDE ELEVATION



SECTION A



SECTION B



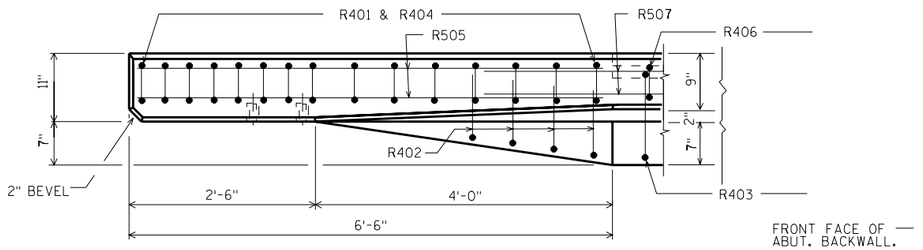
SECTION C

BILL OF BARS

FOR ABUTMENT PARAPETS

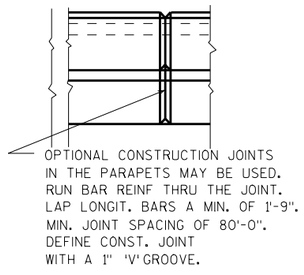
THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
EPOXY COAT ALL PARAPET REINF.

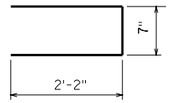
BAR MARK	NO. REQ'D. ABUT.	NO. REQ'D. ABUT.	LENGTH	BENT	LOCATION
R401	30	30	4-9	X	WINGS STIRRUPS
R402	8	8	3-1	X	WINGS
R403			4-9	X	WINGS STIRRUPS
R404	30	30	4-9	X	WINGS
R505	12	12	6-2		WINGS
R406			4-10	X	WINGS
R507	10	10			WINGS



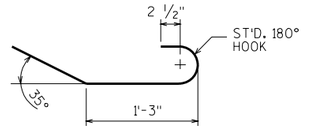
PLAN

FRONT FACE OF ABUT. BACKWALL.

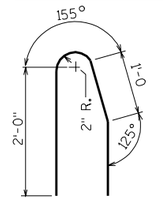




R401



R402



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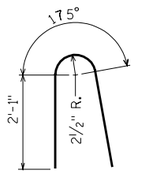

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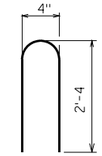
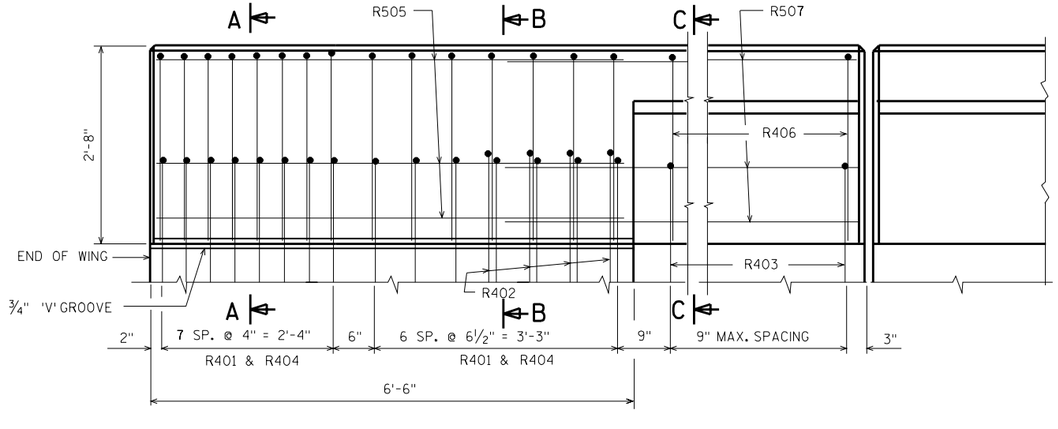
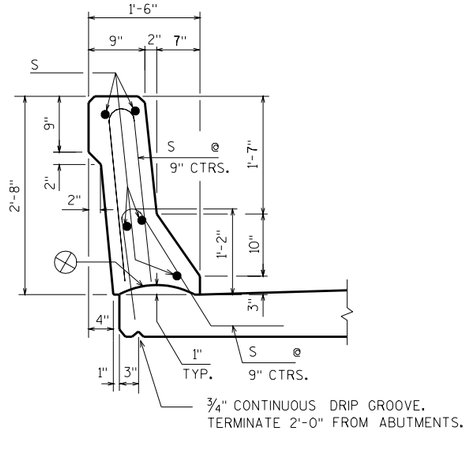


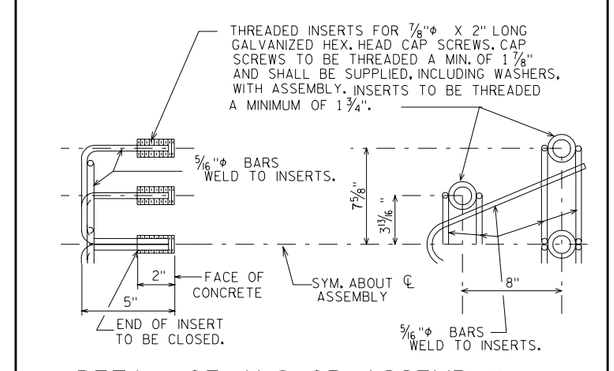
R406



OUTSIDE ELEVATION



SECTION THRU PARAPET ON BRIDGE



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

⊗ CONST. JOINT - STRIKE OFF AS SHOWN.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

SLOPED FACE PARAPET "B"

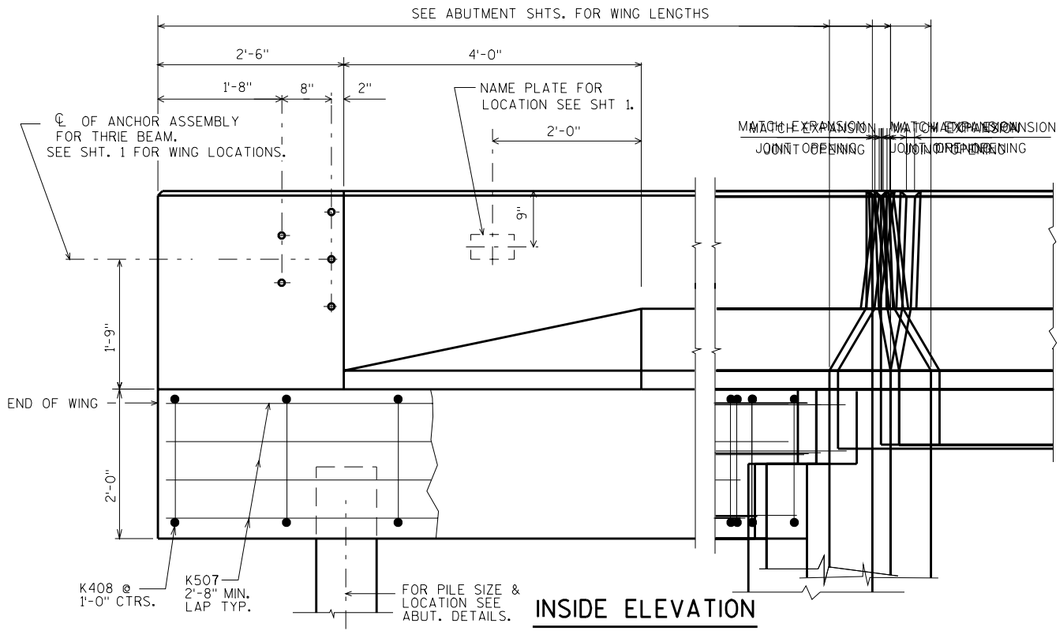
SHEET

8

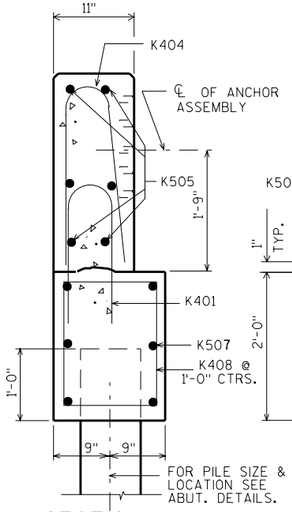
FILE= PPTB.DGN
SCALE =

STATE PROJECT NUMBER

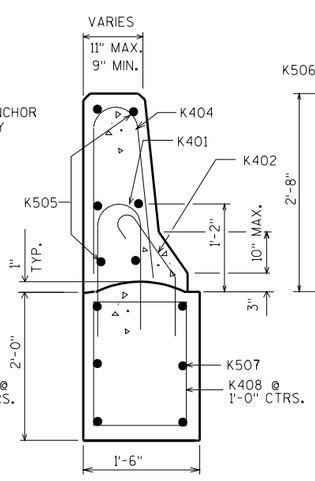
- -



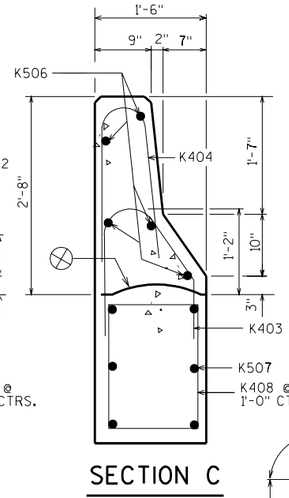
INSIDE ELEVATION



SECTION A



SECTION B



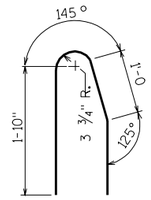
SECTION C

BILL OF BARS

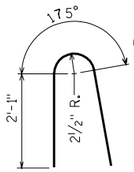
FOR ABUTMENT PARAPETS

THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
EPOXY COAT ALL PARAPET REINF.

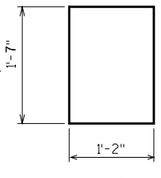
BAR MARK	NO. REQ'D. ABUT.	NO. REQ'D. ABUT.	LENGTH	BENT	LOCATION
K401	15	15	4-9	X	WINGS STIRRUPS
K402	4	4	3-1	X	WINGS
K403			5-1	X	WINGS STIRRUPS
K404			4-9	X	WINGS
K505	6	6	6-2		WINGS
K506	5	5			WINGS
K507					WING FOOTING
K408			6-0	X	WING FOOTING



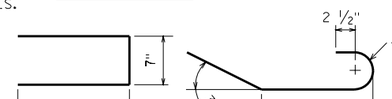
K403



K404

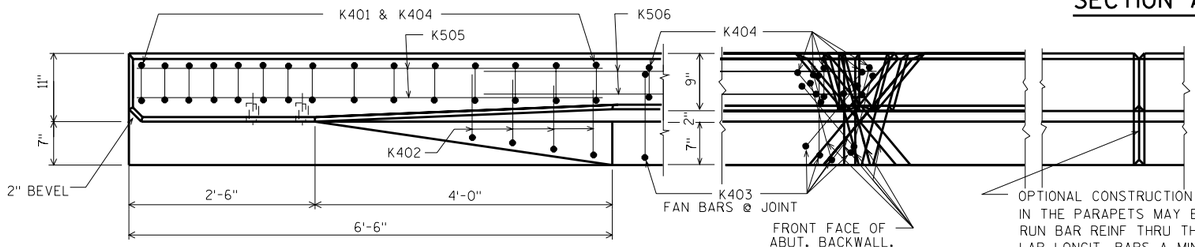


K408



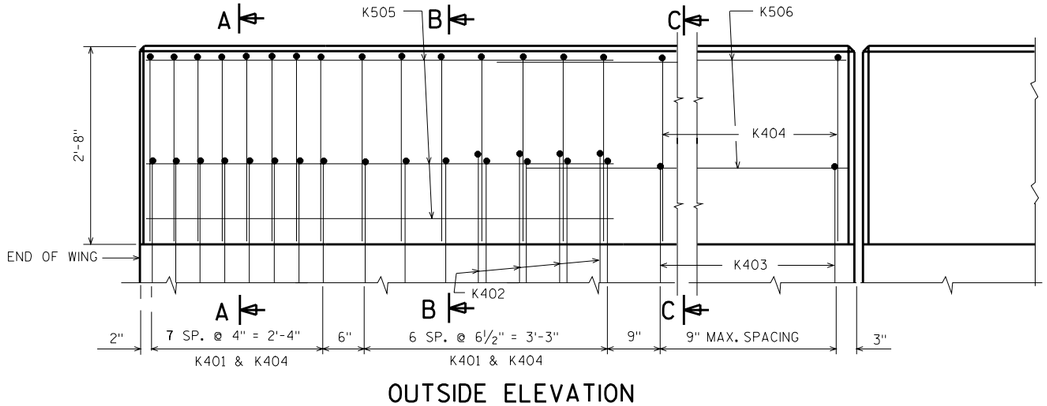
K401

K402

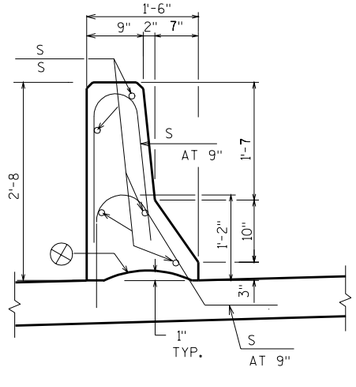


PLAN

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A 1" 'V' GROOVE.

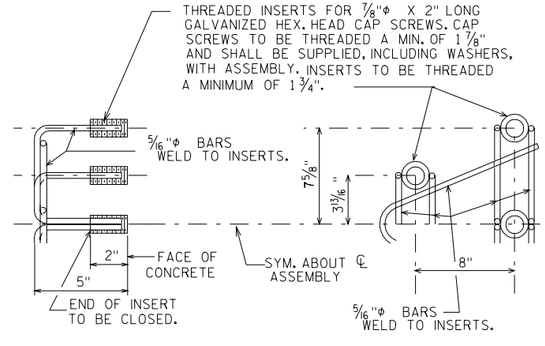


OUTSIDE ELEVATION



SECTION THRU PARAPET ON BRIDGE

⊗ CONST. JOINT - STRIKE OFF AS SHOWN.



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

SLOPED FACE PARAPET "C"

SHEET

8

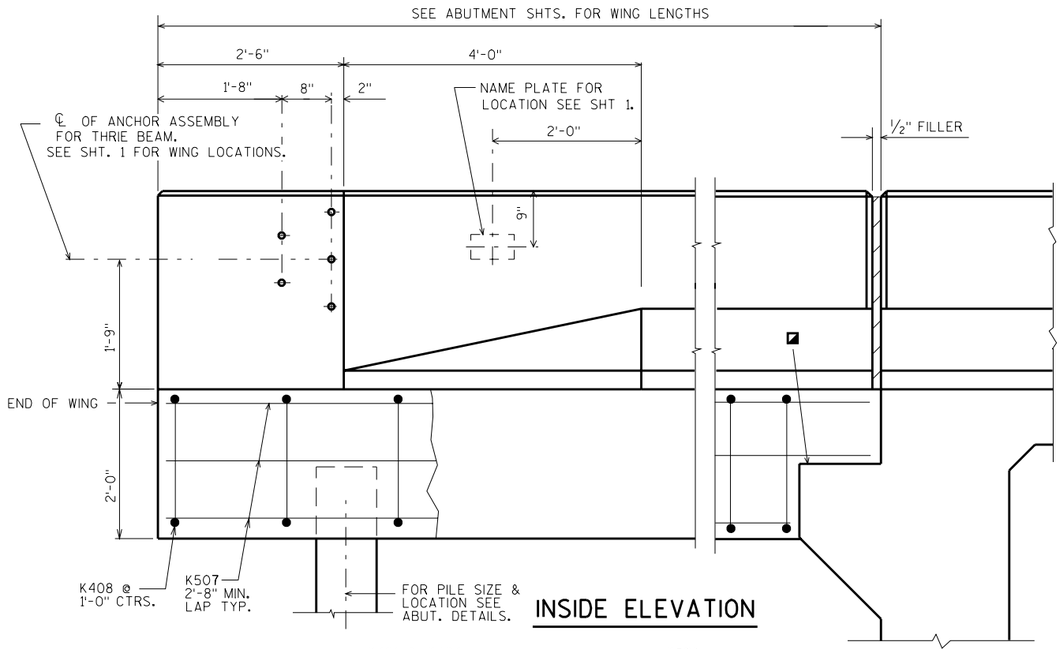
9-1-94

FT 55

FILE= PPTC.DGN
SCALE =

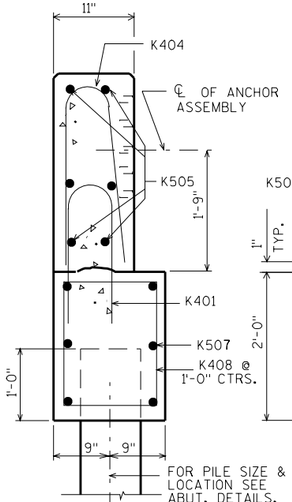
STATE PROJECT NUMBER

- -

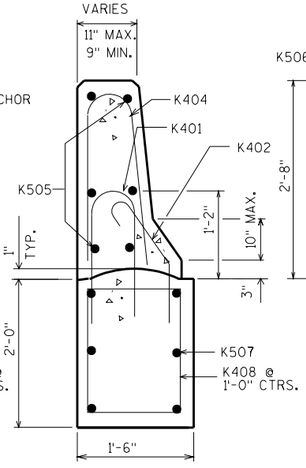


INSIDE ELEVATION

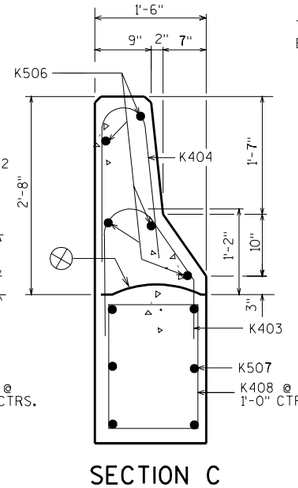
■ STEEL TROWEL TOP SURFACE OF ABUT. PAVING NOTCH & SLAB UNDER WING PPT. PLACE MULTIPLE LAYERS OF POLYETHELENE SHEETING BETWEEN PARAPET & PAVING NOTCH BEFORE PLACING PARAPET CONCRETE. (TOTAL THICKNESS TO BE .03" MIN)



SECTION A



SECTION B



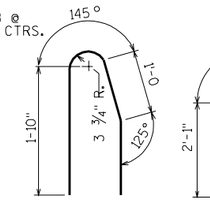
SECTION C

BILL OF BARS

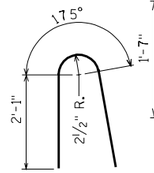
FOR ABUTMENT PARAPETS

THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
EPOXY COAT ALL PARAPET REINF.

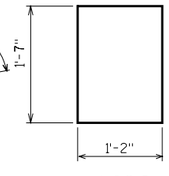
BAR MARK	NO. REQ'D. ABUT.	NO. REQ'D. ABUT.	LENGTH	BENT	LOCATION
K401	15	15	4-9	X	WINGS STIRRUPS
K402	4	4	3-1	X	WINGS
K403			5-1	X	WINGS STIRRUPS
K404			4-9	X	WINGS
K505	6	6	6-2		WINGS
K506	5	5			WINGS
K507					WING FOOTING
K408			6-0	X	WING FOOTING



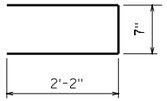
K403



K404



K408



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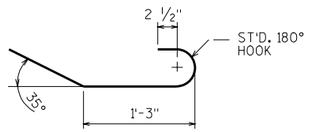
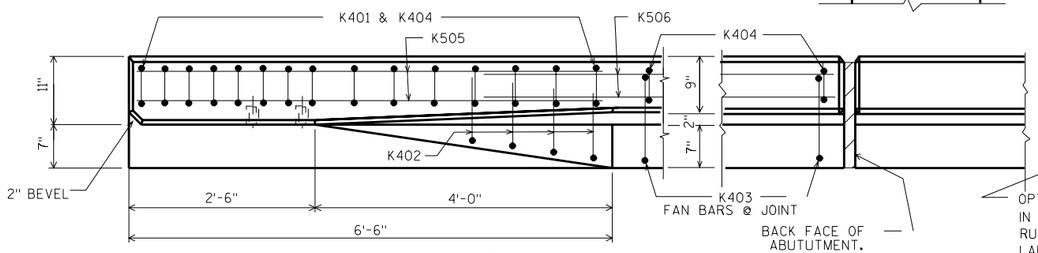
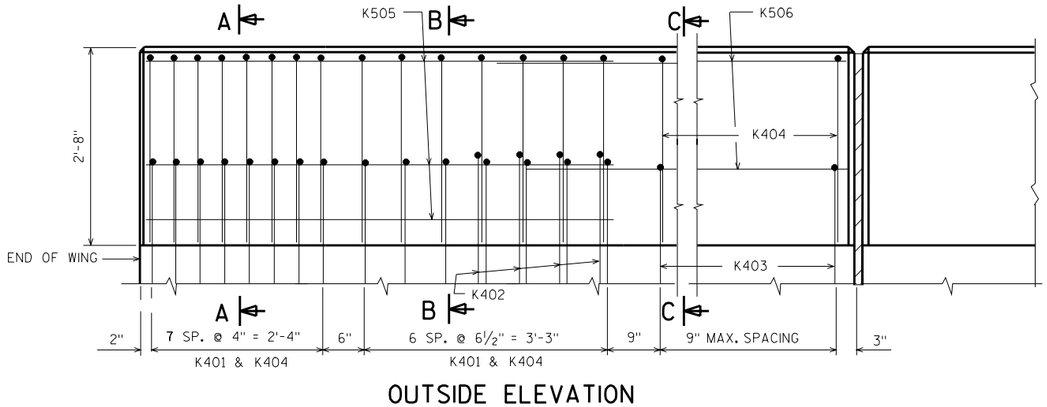


K402

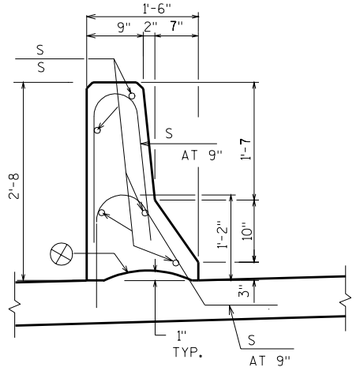


PLAN

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A 1" 'V' GROOVE.

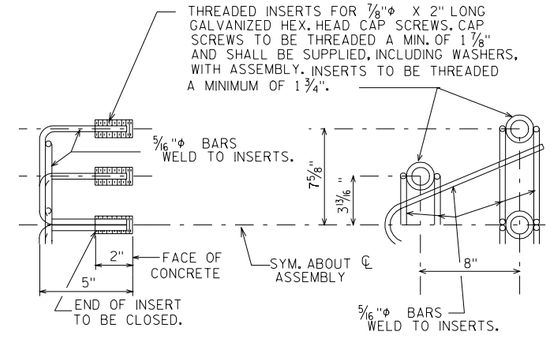


OUTSIDE ELEVATION



SECTION THRU PARAPET ON BRIDGE

⊗ CONST. JOINT - STRIKE OFF AS SHOWN.



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

SLOPED FACE PARAPET "C"

SHEET

8

9-1-94

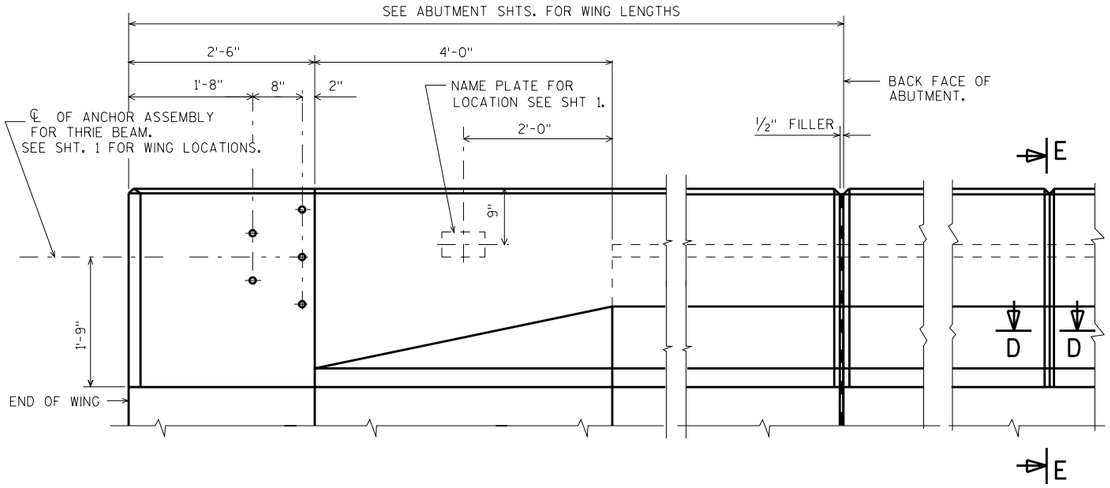
LEVEL 3 SQUARE

FILE= PPTCFSE.DGN
SCALE =

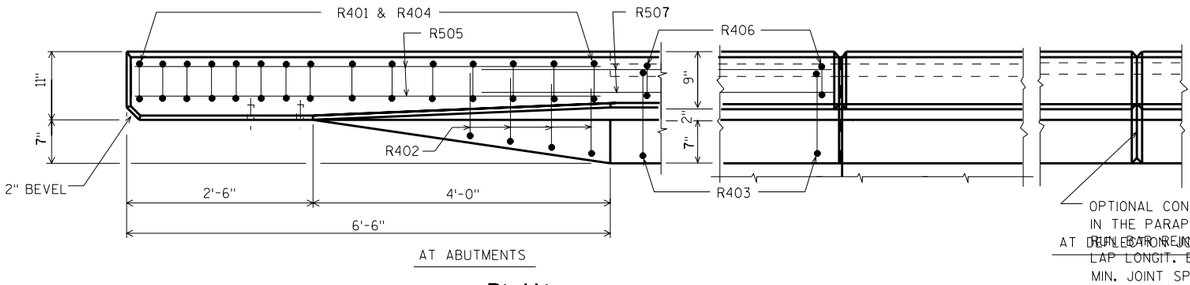
FT 55

STATE PROJECT NUMBER

- -

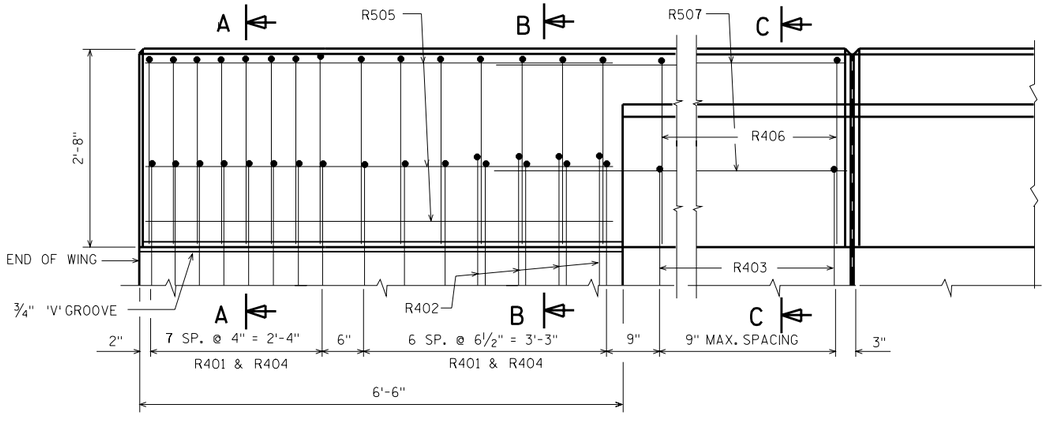


INSIDE ELEVATION



AT ABUTMENTS

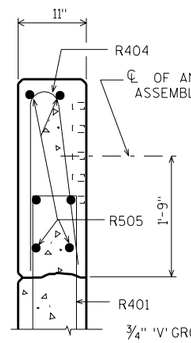
PLAN



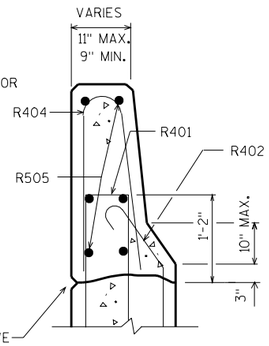
OUTSIDE ELEVATION

PARAPET NOTES

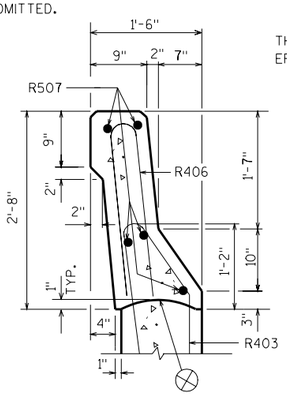
WHEN PARAPETS ARE POURED CONTINUOUSLY FROM END TO END, THEY SHALL BE SEPARATED AT THE DEFLECTION JOINTS BY A PIECE OF ⅛" ALUMINUM OR ZINC PLATE CUT AS SHOWN IN SECTION "E" BY THE SHADED AREA IF CONSTRUCTION JOINTS IN THE PARAPETS ARE USED AT THE DEFLECTION JOINTS, ONE SIDE OF THE JOINT SHALL BE COATED WITH BITUMINUOUS PAINT AND THE PLATE SEPARATORS MAY BE OMITTED.



SECTION A



SECTION B



SECTION C

BILL OF BARS

FOR ABUTMENT PARAPETS

THE FIRST DIGIT OF THE BAR MARK SIGNIFIES THE BAR SIZE.
EPOXY COAT ALL PARAPET REINF.

BAR MARK	NO. REQ'D. ABUT.	NO. REQ'D. ABUT.	LENGTH	BENT	LOCATION
R401	30	30	4-9	X	WINGS STIRRUPS
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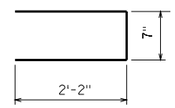
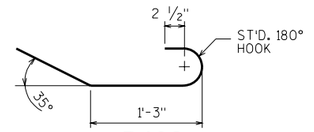
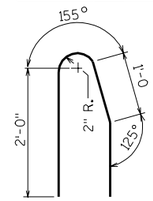
R404	30	30	4-9	X	WINGS
R505	12	12	6-2		WINGS
R406			4-10	X	WINGS
R507	10	10			WINGS



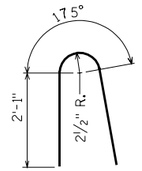
R401



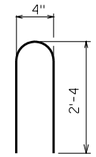
R402



R403



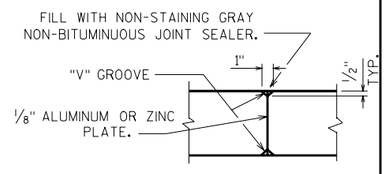
R404



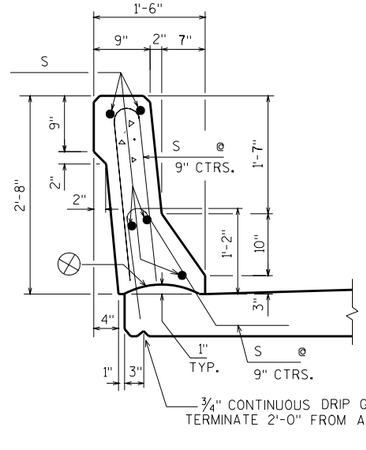
R406

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. REINF. CONTINUOUS THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A 1" 'V' GROOVE.

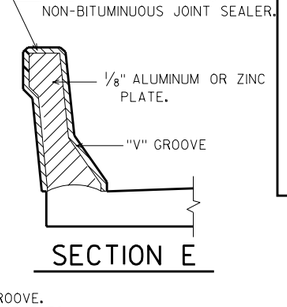
AT DEFLECTION JOINTS



SECTION D

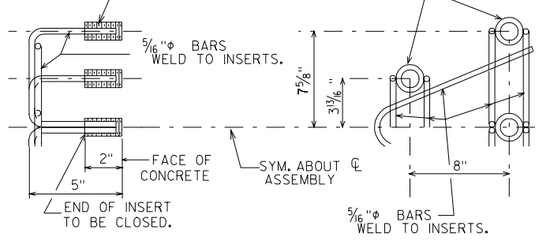


SECTION THRU PARAPET ON BRIDGE



SECTION E

⊗ CONST. JOINT - STRIKE OFF AS SHOWN.



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

SLOPED FACE PARAPET "B"

SHEET

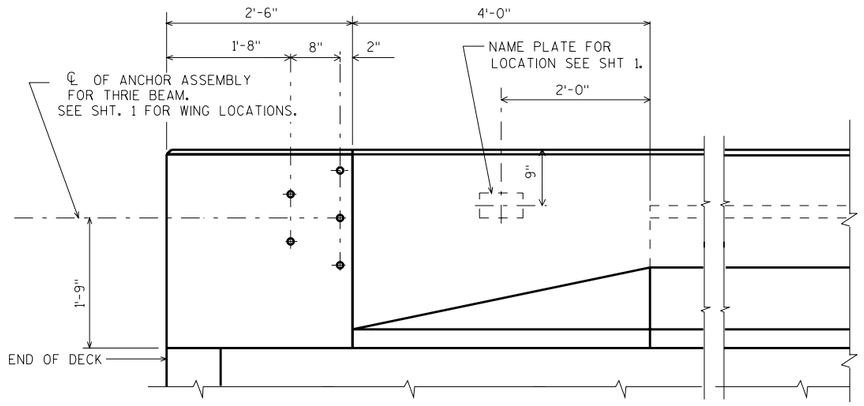
8

9-1-94

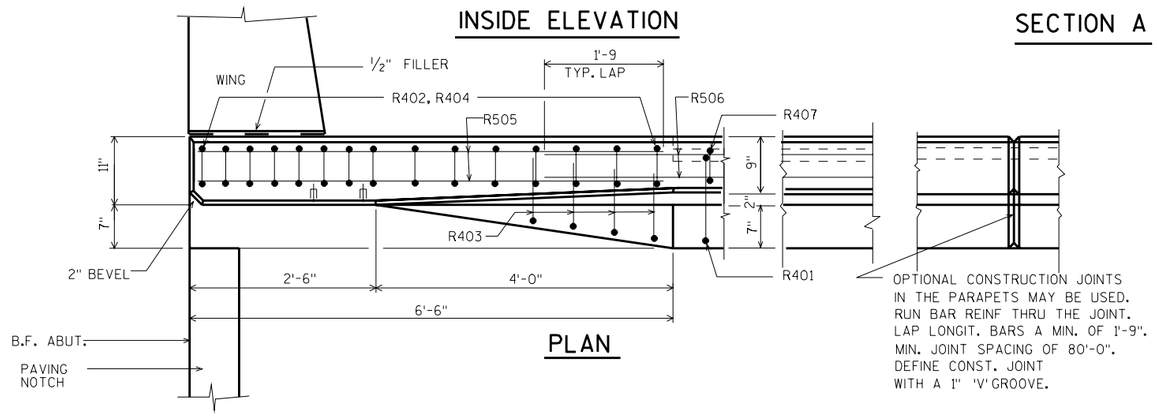
FILE= PPTDF.DGN
SCALE =

STATE PROJECT NUMBER

- -

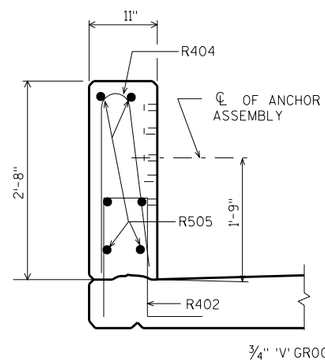


INSIDE ELEVATION

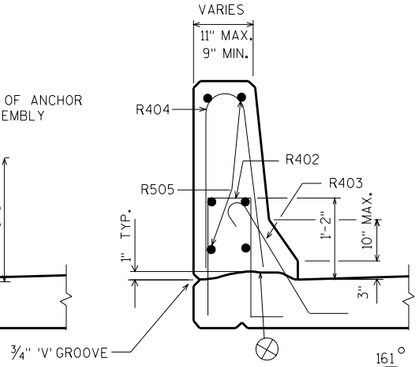


PLAN

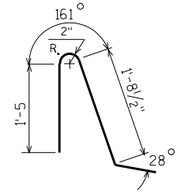
OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9". MIN. JOINT SPACING OF 80'-0". DEFINE CONST. JOINT WITH A 1" 'V' GROOVE.



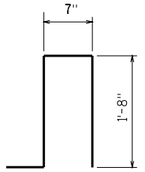
SECTION A



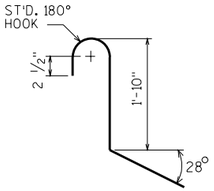
SECTION B



R401



R402



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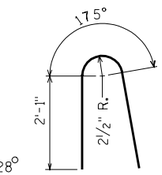
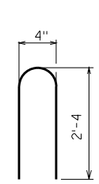


R404

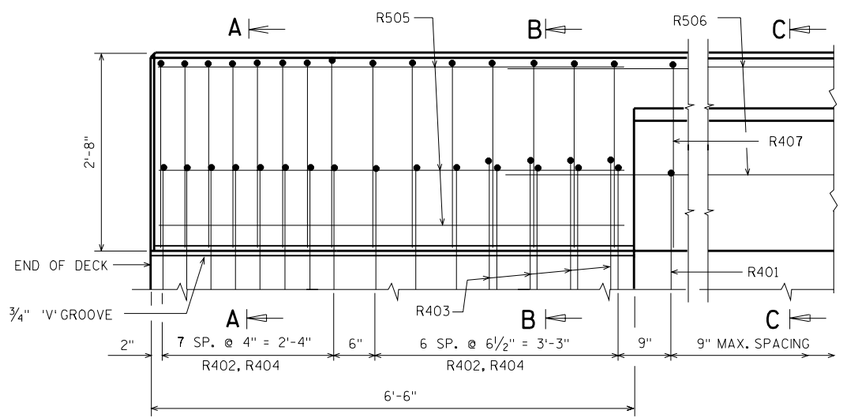


R407

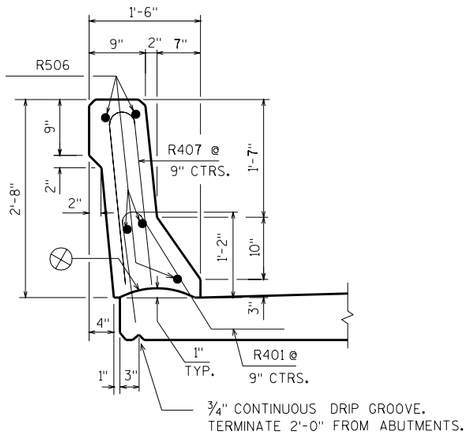
BILL OF BARS

NOTE: THE FIRST OR FIRST TWO DIGITS OF THE BAR MARK SIGNIFIES THE BAR SIZE.

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	CUT. DIAG.	BUN-DLE	LOCATION
R401	X		4-3	X			SLAB & PARAPET VERT.
R402	X	60	4-5	X			SLAB & PARAPET VERT. NEAR ABUTS.
R403	X	16	3-1	X			SLAB & PARAPET VERT. NEAR ABUTS.
R404	X	60	4-9	X			PARAPET VERTICAL
R505	X	24	6-2				PARAPET HORIZ.
R506	X						PARAPET HORIZ.
R407	X		4-10	X			PARAPET VERTICAL

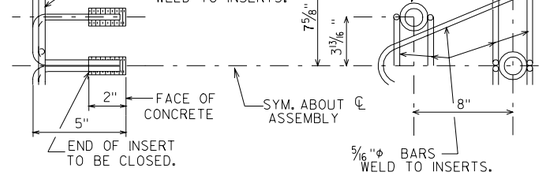


OUTSIDE ELEVATION



SECTION C

⊗ CONST. JOINT - STRIKE OFF AS SHOWN.



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

SLOPED FACE PARAPET "B"

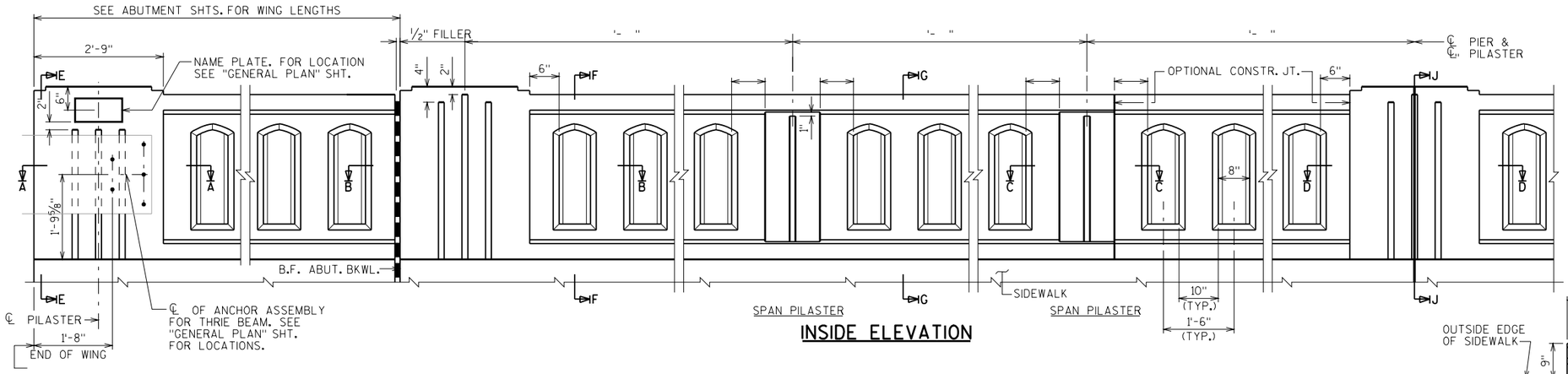
SHEET

8

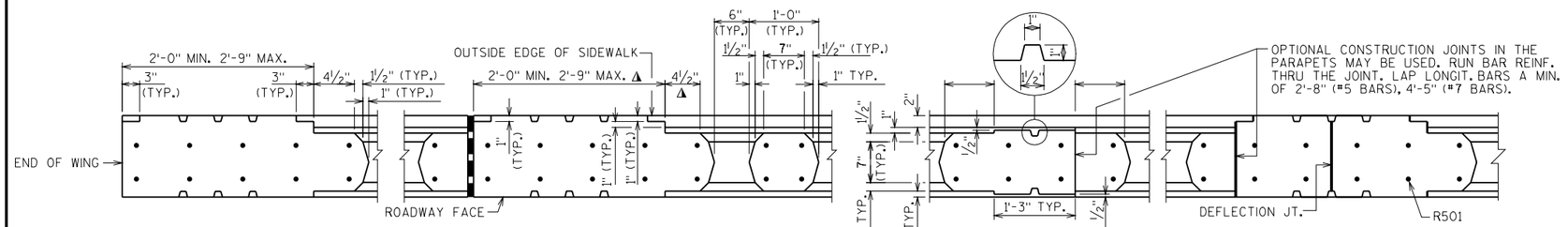
FILE= PPTEOS.DGN
SCALE = 1
9-94

LEVEL 3 SQUARE

STATE PROJECT NUMBER
- -



INSIDE ELEVATION

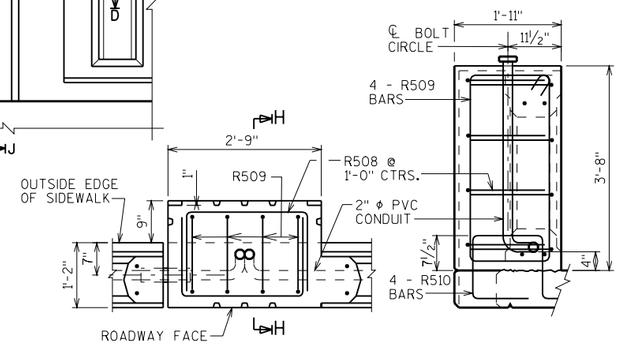


SECTION A-A

SECTION B-B

SECTION C-C

SECTION D-D



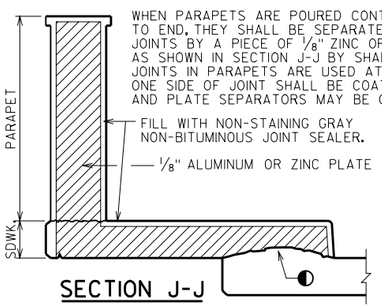
PLAN

SECTION H-H

LIGHT STANDARD

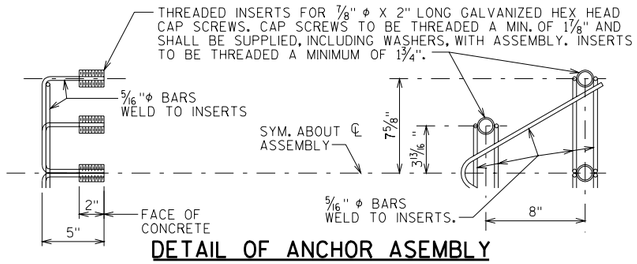
BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	LOCATION
R501	X		8-6	X	PARAPET VERT.
R502	X		3-4	X	PARAPET VERT.
R503	X				PARAPET HORIZ. BOT.
R704	X				PARAPET HORIZ. TOP
R505	X		4-4	X	PARAPET VERT. @ WINGS
R506	X				PARAPET HORIZ. BOT. @ WINGS
R707	X				PARAPET HORIZ. TOP @ WING
R508	X		4-9	X	PARAPET HORIZ. @ LIGHT STD.
R509	X		9-6	X	PARAPET VERT. @ LIGHT STD.
R510	X		4-9	X	PARAPET VERT. @ LIGHT STD.



SECTION J-J

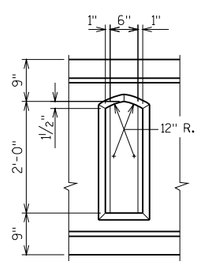
(SHOWING DEFLECTION JOINT IN PARAPET AND SIDEWALK.)



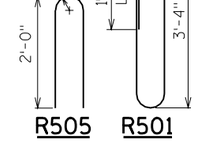
DETAIL OF ANCHOR ASEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLY FOR BEAM GUARD", EACH.

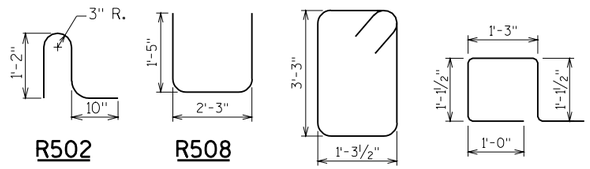


WINDOW DETAILS



R505

R501

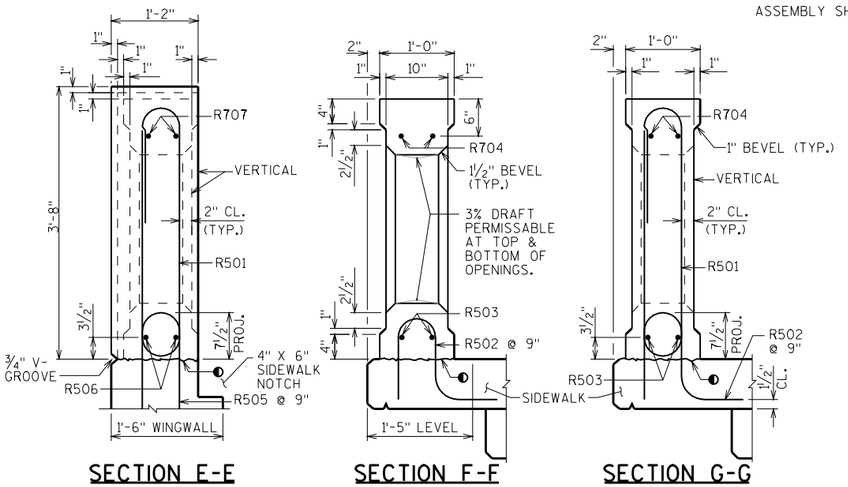


R502

R508

R509

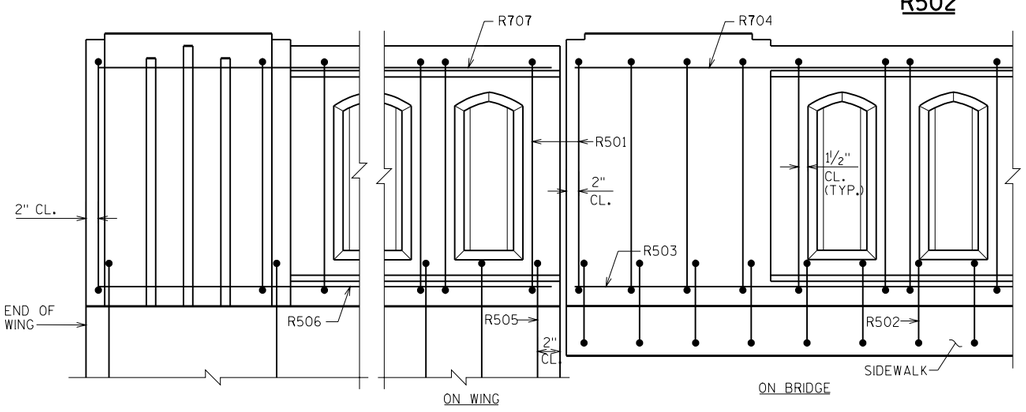
R510



SECTION E-E

SECTION F-F

SECTION G-G



OUTSIDE ELEVATION SHOWING TYPICAL REINFORCEMENT PLACEMENT

NOTES

BID ITEM SHALL BE "VERTICAL FACE PARAPET TYPE "TX" ", WHICH SHALL INCLUDE ALL ITEMS SHOWN.

ALL REINFORCING STEEL TO BE EPOXY COATED.

◐ HORIZ. CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

VERTICAL FACE PARAPET 'TX'

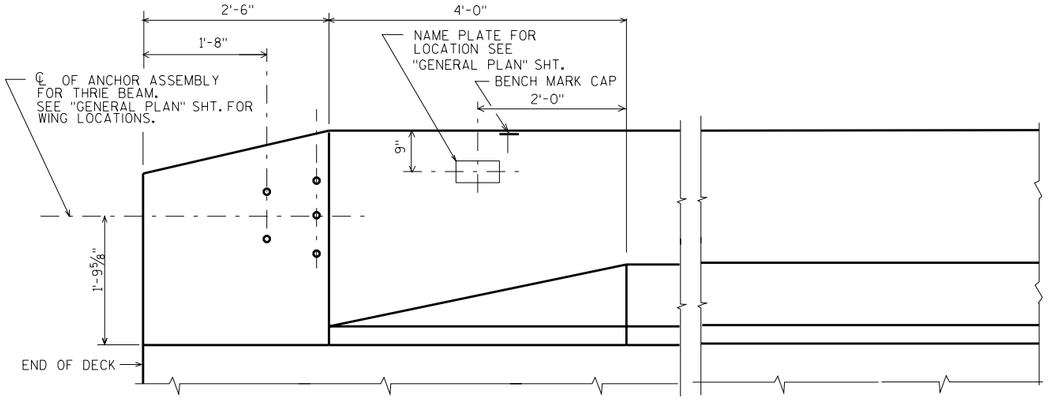
SHEET

8

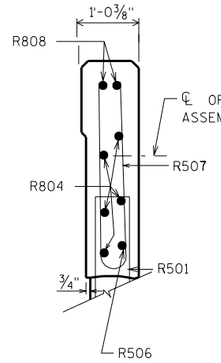
FILE= RAILTEX.DGN
SCALE =

1 2 3 4 5 6 10 12 13 14 15 16

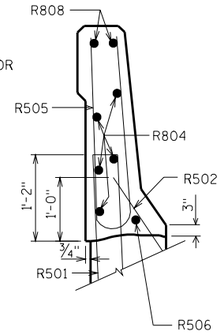
STATE PROJECT NUMBER
- -



INSIDE ELEVATION



SECTION A



SECTION B

⚠ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

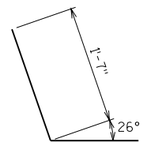
BILL OF BARS

BAR MARK	COAT	NO.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X		4-5	X		PARAPET VERT.
R502	X		2-4	X		PARAPET VERT.
R503	X		4-6	X		PARAPET VERT.
R804	X					PARAPET HORIZ.
R505	X		6-6	X		PARAPET VERT.
R506	X			X		PARAPET HORIZ.
R507	X		5-8	X	⚠	PARAPET HORIZ.
R808	X			X		PARAPET HORIZ.

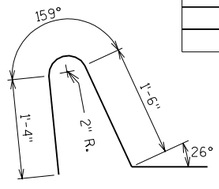
BAR SERIES TABLE

MARK	NO. REQD.	LENGTH
R507	4 SERIES OF 6	4-10 TO 6-6

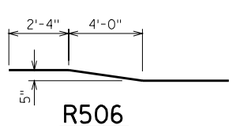
R501



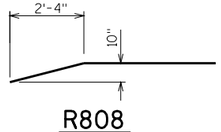
R502



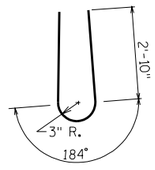
R503



R506



R808



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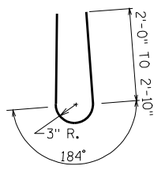
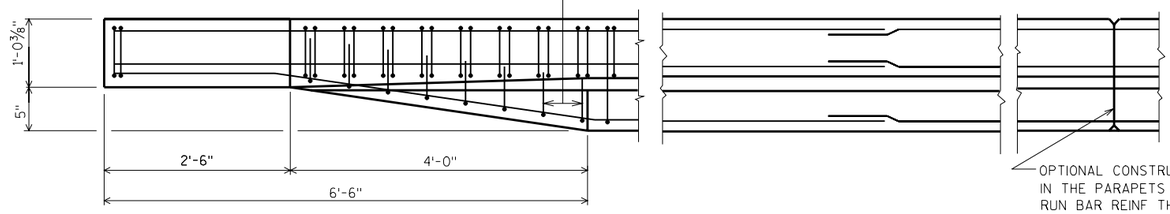
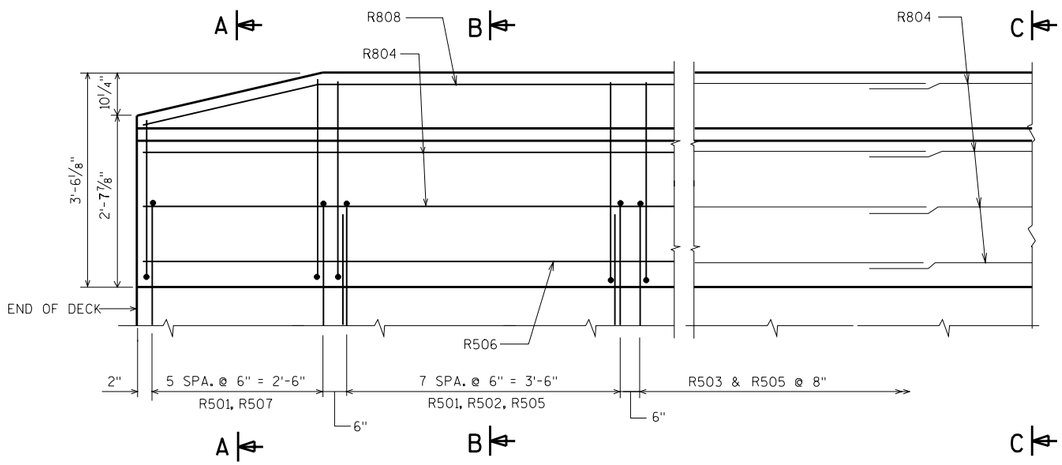


R507

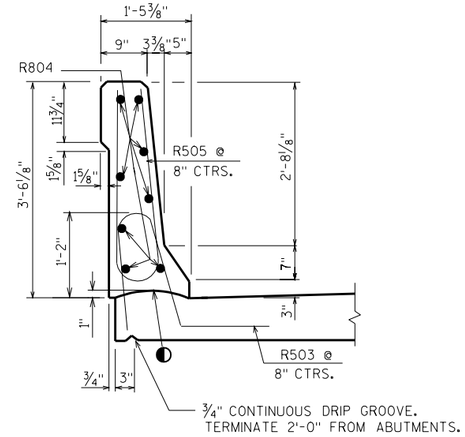


PLAN

OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 3'-5" MIN. JOINT SPACING OF 80'-0" DEFINE CONST. JOINT WITH A ¾" 'V' GROOVE.

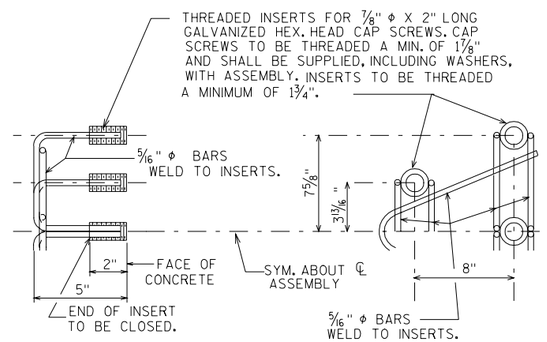


OUTSIDE ELEVATION



SECTION C

◐ CONST. JOINT - STRIKE OFF AS SHOWN.



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

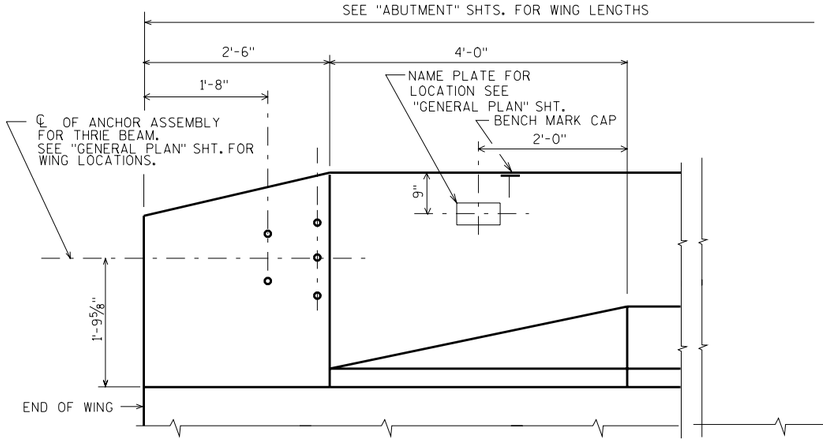
CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

SLOPED FACE PARAPET "HF"

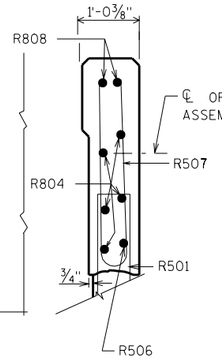
SHEET 8

FILE= HFDEC.DGN
SCALE =
1-03

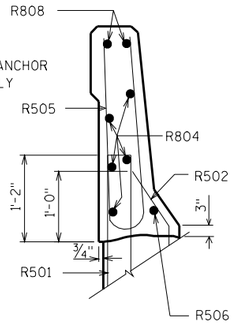
STATE PROJECT NUMBER
- -



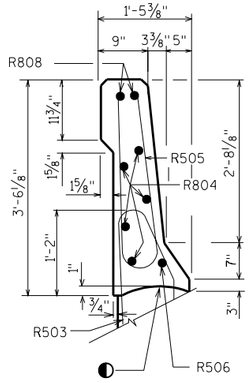
INSIDE ELEVATION



SECTION A



SECTION B



SECTION C

▲ LENGTH SHOWN FOR BAR IS AN AVERAGE LENGTH AND SHOULD ONLY BE USED FOR BAR WEIGHT CALCULATIONS. SEE BAR SERIES TABLE FOR ACTUAL LENGTHS.

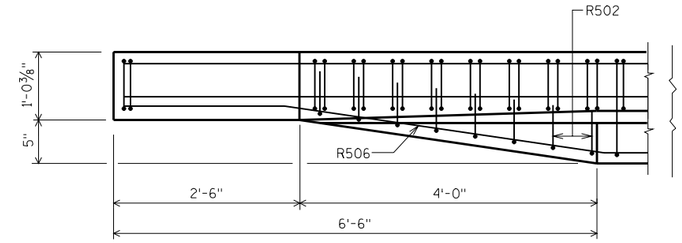
BILL OF BARS

FOR ABUTMENT PARAPETS

BAR MARK	COAT	ABUT.	ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X			4-7	X		PARAPET VERT.
R502	X			2-4	X		PARAPET VERT.
R503	X			4-6	X		PARAPET VERT.
R804	X						PARAPET HORIZ.
R505	X			6-6	X		PARAPET VERT.
R506	X				X		PARAPET HORIZ.
R507	X			5-8	X	▲	PARAPET VERT.
R808	X				X		PARAPET HORIZ.
	X						
	X						
	X						

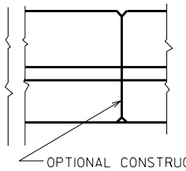
BAR SERIES TABLE

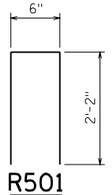
MARK	NO. REQD.	LENGTH
R507	4 SERIES OF 6	4-10 TO 6-6



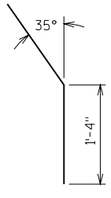
PLAN

ABUT. BACKWALL.

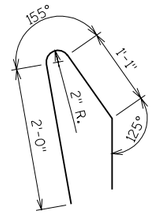




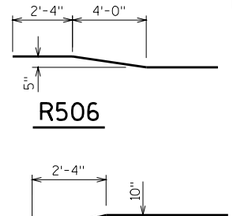
R501



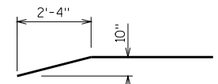
R502



R503



R506



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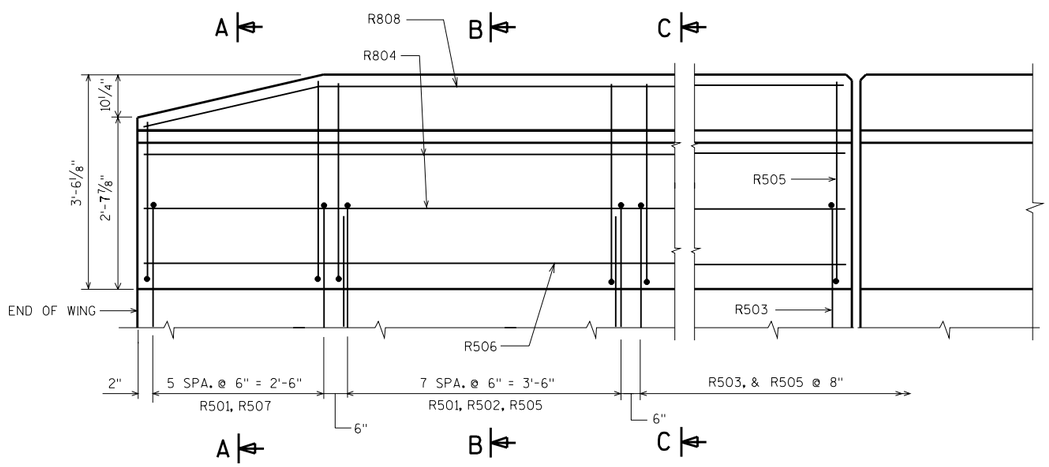
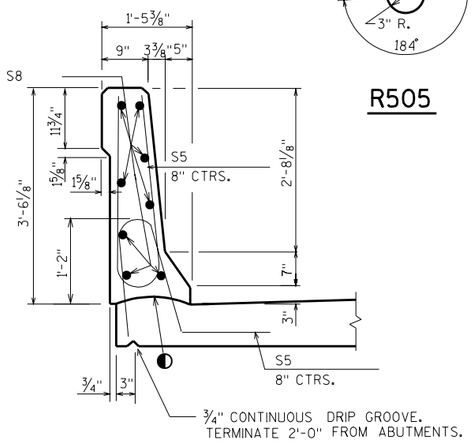
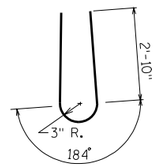


OUTSIDE ELEVATION



SECTION THRU PARAPET ON BRIDGE



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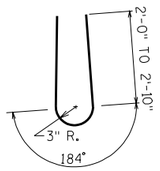

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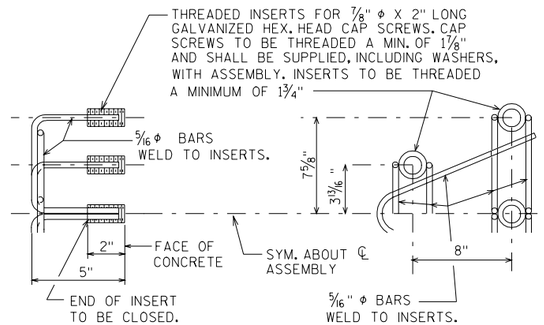


DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

SLOPED FACE PARAPET "HF"

SHEET

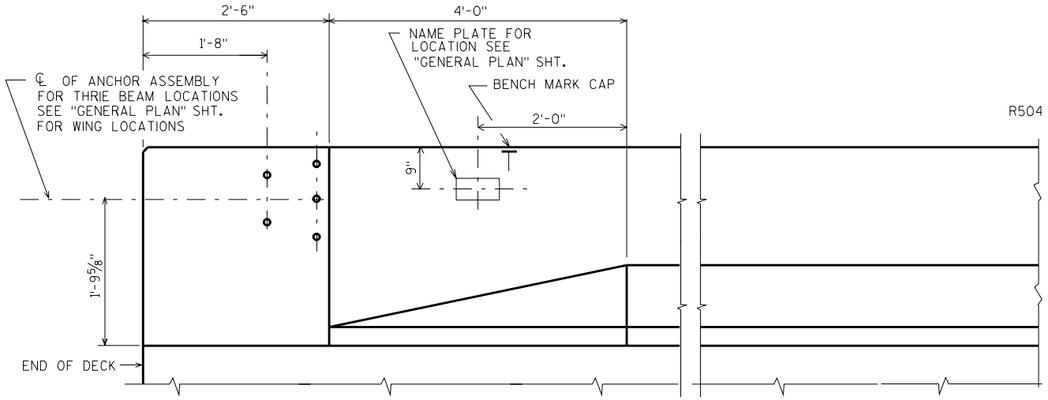
8

FILE= HFWIN.DGN
SCALE =
1-03

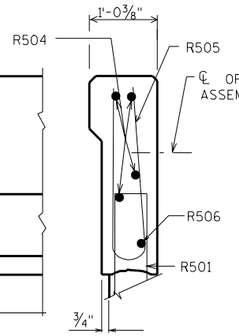
1 2

STATE PROJECT NUMBER

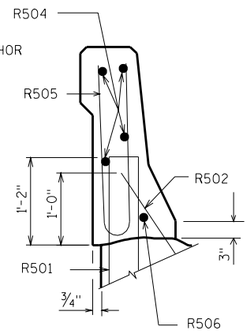
- -



INSIDE ELEVATION



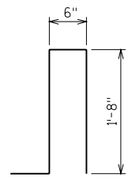
SECTION A



SECTION B

BILL OF BARS

BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X		4-5	X		PARAPET VERT.
R502	X		2-4	X		PARAPET VERT.
R503	X		4-2	X		PARAPET VERT.
R504	X					PARAPET HORIZ.
R505	X		4-10	X		PARAPET VERT.
R506	X			X		PARAPET HORIZ.



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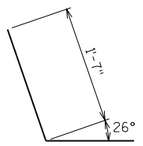
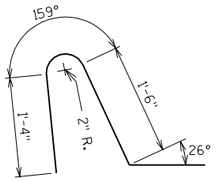
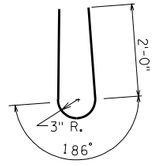


R502



R503



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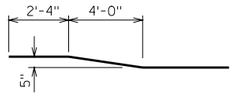

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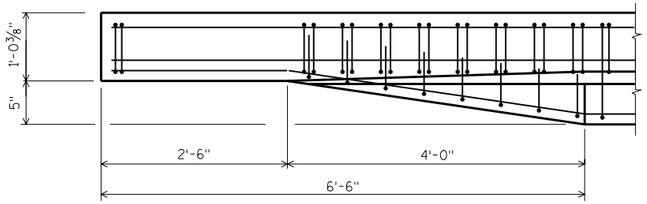
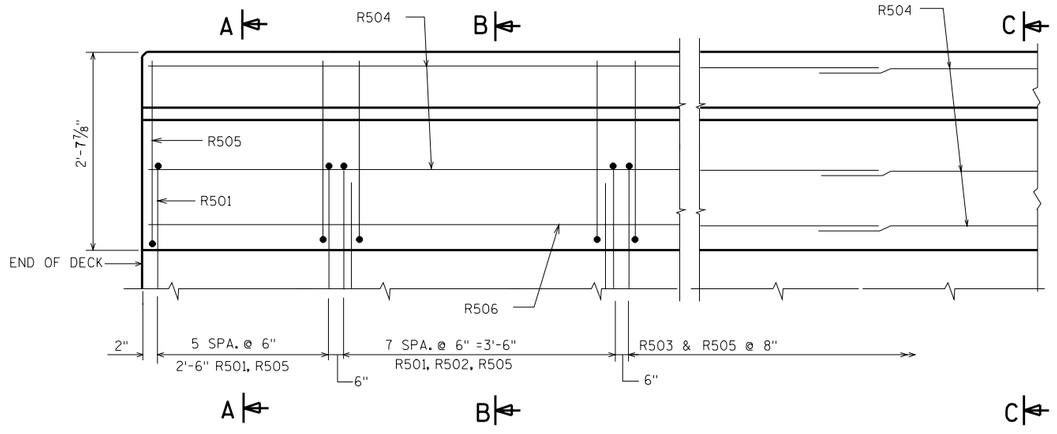
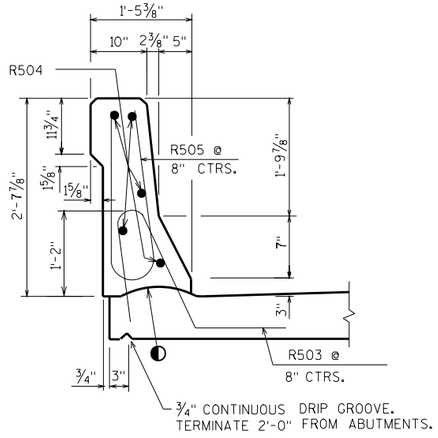


PLAN

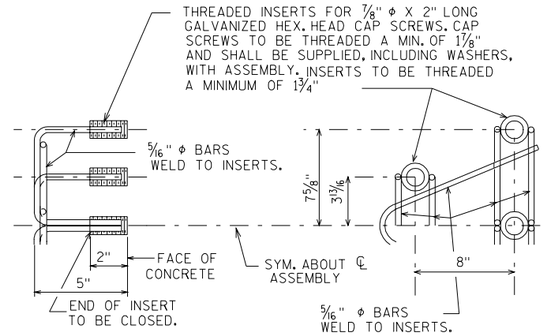
OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9" MIN. JOINT SPACING OF 80'-0" DEFINE CONST. JOINT WITH A ¾" 'V' GROOVE.



OUTSIDE ELEVATION



SECTION C



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC.	DRAWN BY	PLANS CK'D.
1996		

SLOPED FACE PARAPET LF

SHEET

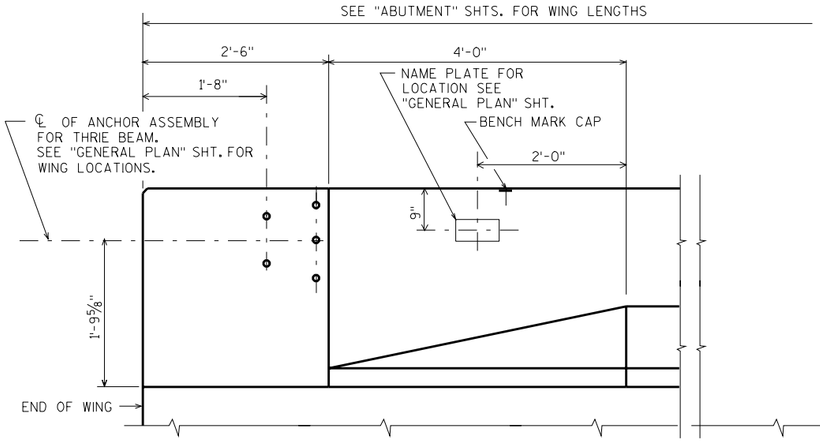
8

12

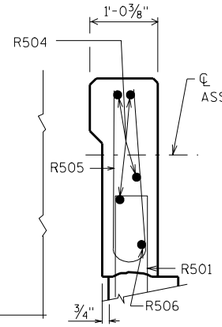
FILE= LFDEC.DGN
SCALE =
1-03

STATE PROJECT NUMBER

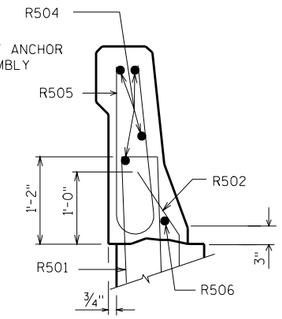
- -



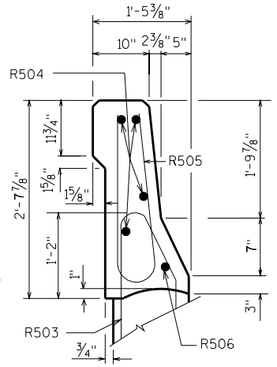
INSIDE ELEVATION



SECTION A



SECTION B

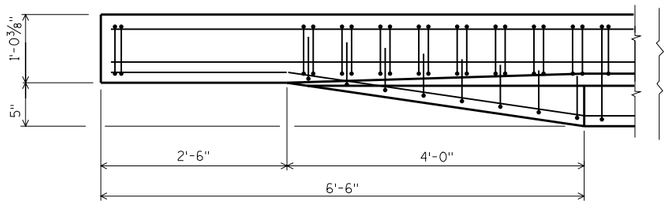


SECTION C

BILL OF BARS

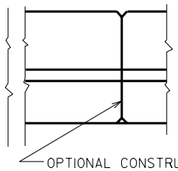
FOR ABUTMENT PARAPETS

BAR MARK	COAT	ABUT.	ABUT.	LENGTH	BENT	BAR SERIES	LOCATION
R501	X			4-7	X		PARAPET VERT.
R502	X			2-4	X		PARAPET VERT.
R503	X			4-6	X		PARAPET VERT.
R504	X						PARAPET HORIZ.
R505	X			4-10	X		PARAPET VERT.
R506	X				X		PARAPET HORIZ.

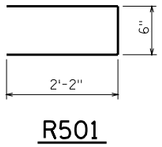


PLAN

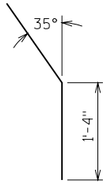
ABUT. BACKWALL.



OPTIONAL CONSTRUCTION JOINTS IN THE PARAPETS MAY BE USED. RUN BAR REINF THRU THE JOINT. LAP LONGIT. BARS A MIN. OF 1'-9" MIN. JOINT SPACING OF 80'-0" DEFINE CONST. JOINT WITH A ¾" 'V' GROOVE.



R501



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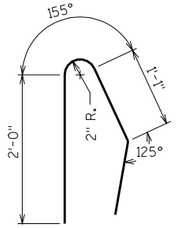

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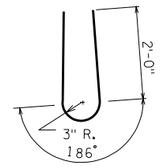

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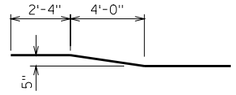

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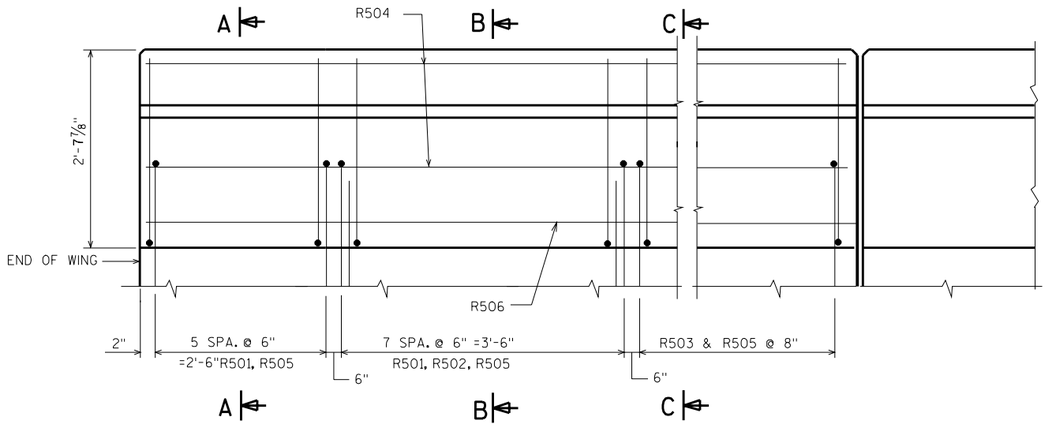
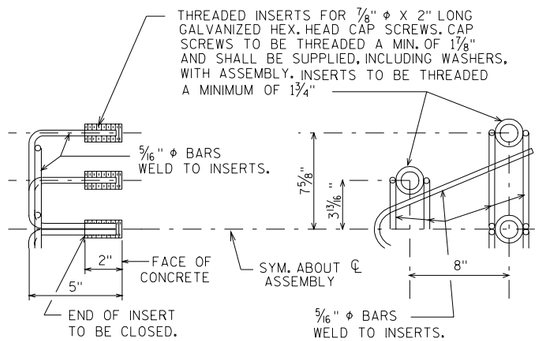
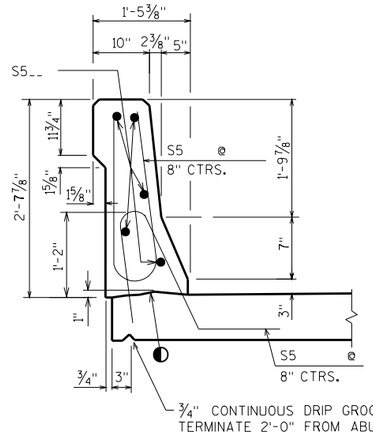


OUTSIDE ELEVATION



DETAIL OF ANCHOR ASSEMBLY

NOTE: HEX. HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.



SECTION THRU PARAPET ON BRIDGE

◐ CONST. JOINT - STRIKE OFF AS SHOWN.

8

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

SLOPED FACE PARAPET LF

SHEET

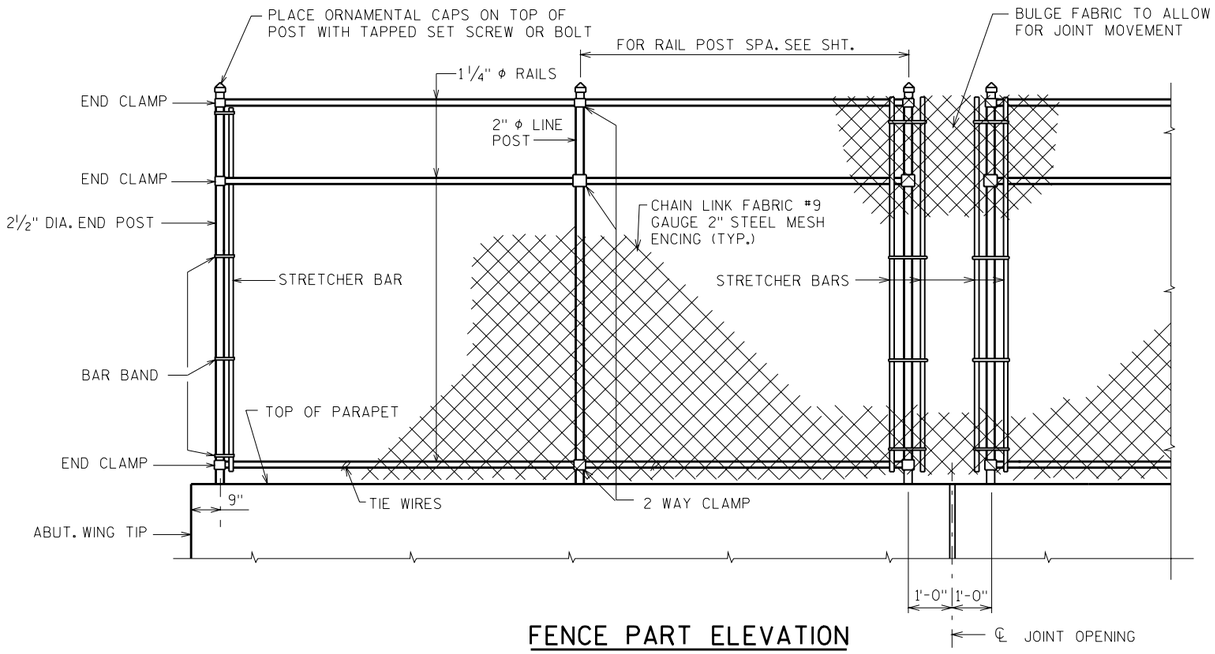
FILE= LFWIN.DGN
SCALE =

1-03

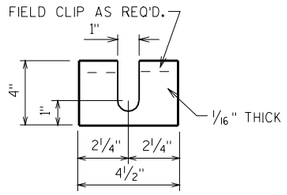
12

STATE PROJECT NUMBER

- -

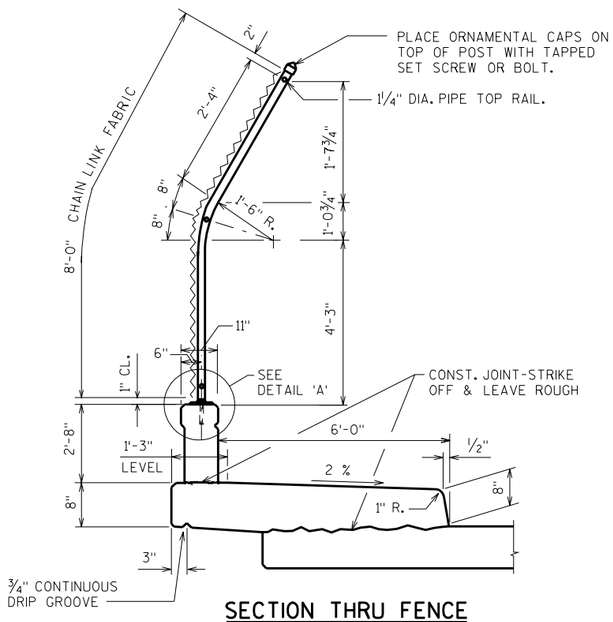


FENCE PART ELEVATION

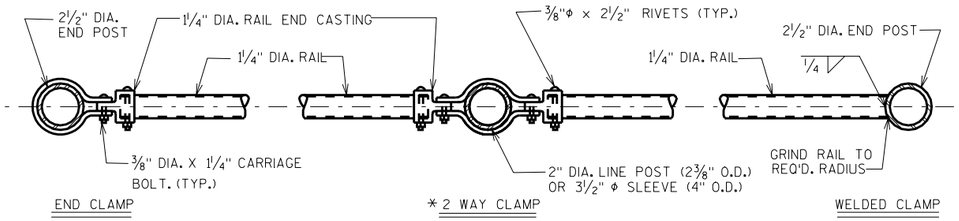


POST SHIM DETAILS

SHIMS REQUIRED ONLY WHEN POSTS ARE WELDED TO BASE PLATES. PROVIDE 4 SHIMS PER POST.

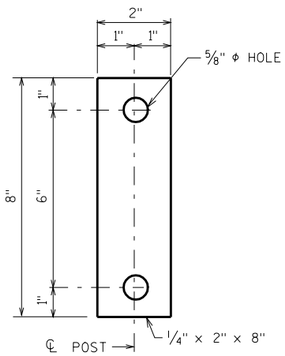


SECTION THRU FENCE

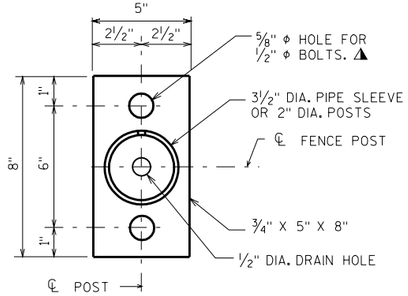


PLAN OF RAILING

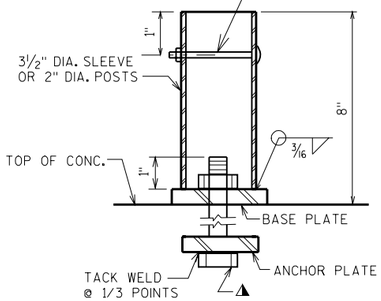
NOTE: PLACE ALL NUTS ON OUTSIDE OF FENCE USE HARDWARE AS DETAILED



ANCHOR PLATE



BASE PLATE



ELEVATION

POST ATTACHMENT

UNIT SHALL BE GALV. AFTER FABRICATION

NOTE: IN LIEU OF USING THE 3 1/2" ϕ SLEEVE, THE 2" ϕ FENCE POST MAY BE WELDED TO THE BASE PLATE.

GENERAL NOTES

POSTS ARE TO BE SET VERTICAL.

KNUCKLE TOP AND BOTTOM OF 2" MESH CHAIN LINK FENCING.

ALL FENCING COMPONENTS SHALL BE GALVANIZED STEEL OR APPROVED ALTERNATE LISTED BELOW.

ALL RAILS, POSTS AND SLEEVES ARE STANDARD WEIGHT PIPE, SCHEDULE 40.

PLACE ALL NUTS ON OUTSIDE OF FENCE.

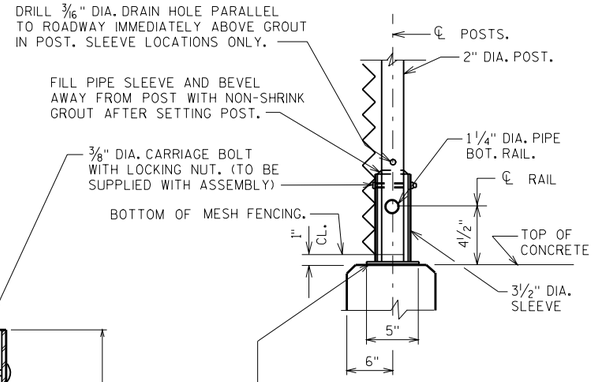
TOP RAIL SHALL BE CONTINUOUS OVER INTERIOR POSTS. MINIMUM LENGTH OF TOP RAIL BETWEEN SPLICES SHALL BE 20'-0". PLACE TOP RAIL SPLICES NEAR 1/4 POINTS OF POST SPACING. NO. 9 GAGE TIES AT 9" SPACING REQ'D. ON RAILS & POSTS WITHOUT STRETCHER BARS.

ALTERNATE FENCING MATERIALS ARE ALLUMINUM, ALUMINUM COATED STEEL AND APPROVED COLOR COATING SYSTEMS. IF ALTERNATE MATERIALS ARE USED FOR POSTS & RAILS, THESE ELEMENTS SHOULD BE DESIGNED.

* ALTERNATE BOULEVARD 2-WAY CLAMP MAY BE USED WHEN THE POST IS EITHER BOLTED TO THE 3 1/2"ϕ PIPE SLEEVE OR DIRECTLY WELDED TO THE BASE PLATE.

▲ 1/2" DIA. X 6 3/8" LONG GALVANIZED HEX BOLT WITH NUT & WASHER. TYPE S, 1/2" ϕ CONCRETE MASONRY ANCHORS MAY BE SUBSTITUTED FOR 1/2" ϕ BOLTS. ANCHOR PLATE NOT REQUIRED WHEN TYPE S ANCHORS ARE USED. SEE ✿

✿ 1/2" CONCRETE MASONRY ANCHOR, TYPE "S" 6" MIN. EMBEDMENT (EPOXY ANCHORED MIN. PULLOUT OF 10 KIPS, THREADED LENGTH OF ANCHOR, WASHER, AND NUT SHALL BE GALVANIZED.



DETAIL A

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

FENCING DETAILS

SHEET

8

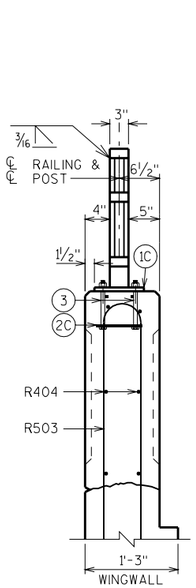
FILE= RAILCHAN.DGN
SCALE = 5.33333

1-03

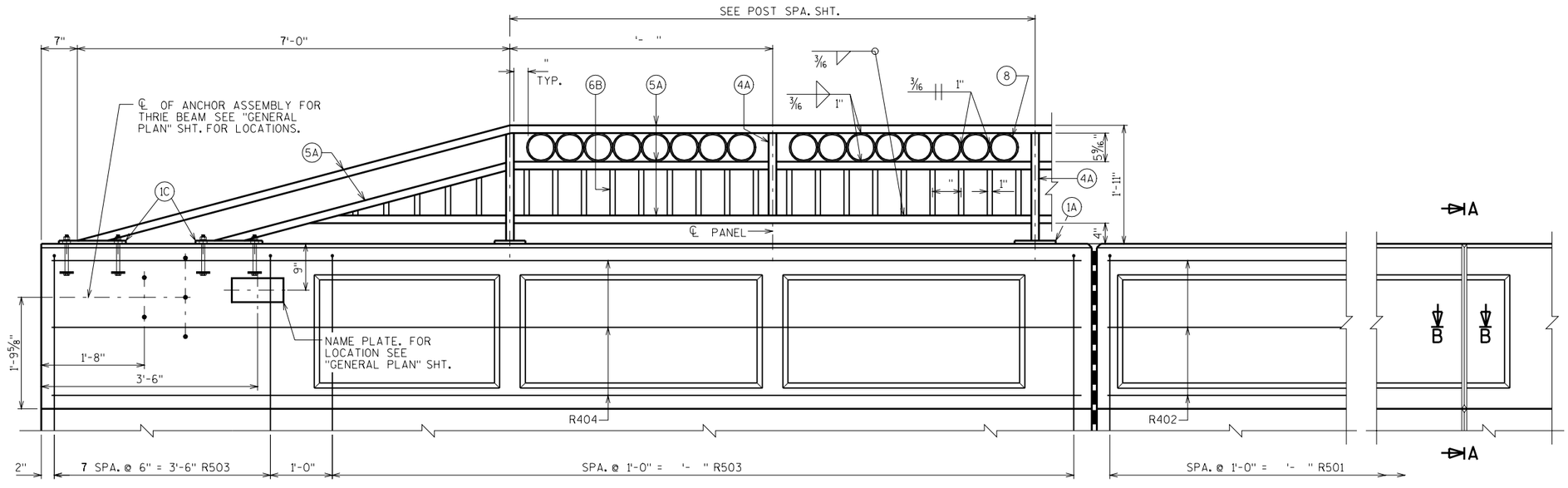
STATE PROJECT NUMBER

- -

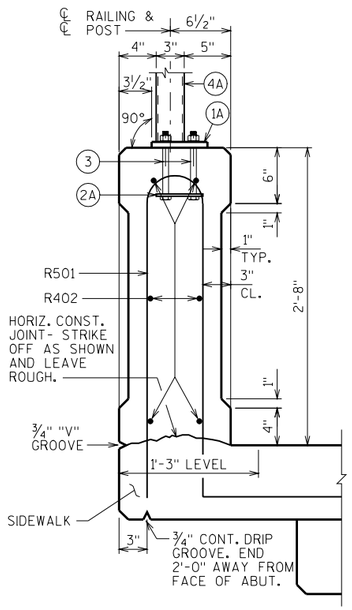
PLAN



END VIEW

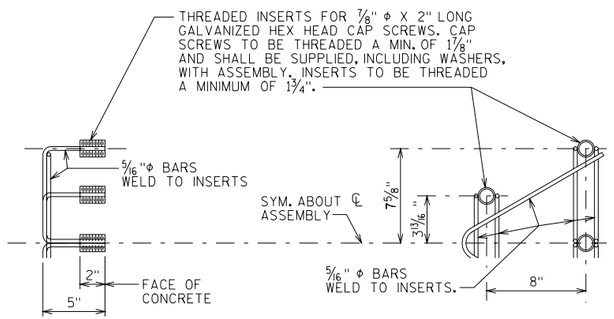


ELEVATION OF PARAPET



SECTION THRU PARAPET ON BRIDGE

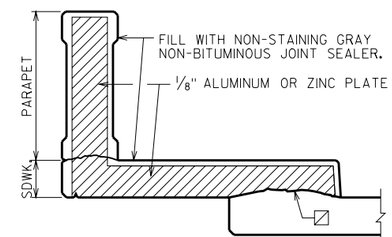
* ADJUST LOCATIONS OF BARS TO ALLOW PLACEMENT OF ANCHOR ASSEMBLY FOR RAILING AND BEAM GUARD.



DETAIL OF ANCHOR ASEMBLY

NOTE: HEX HEAD CAP SCREWS & WASHERS TO BE GALVANIZED IN ACCORDANCE WITH AASHTO M232 CLASS C.

ASSEMBLY SHALL BE BID ITEM "ANCHOR ASSEMBLY FOR BEAM GUARD", EACH.

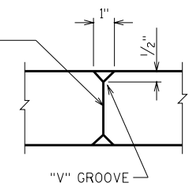


SECTION A-A

(SHOWING DEFLECTION JOINT IN PARAPET AND SIDEWALK.)

WHEN PARAPETS ARE POURED CONTINUOUSLY FROM END TO END, THEY SHALL BE SEPARATED AT THE DEFLECTION JOINTS BY A PIECE OF 1/8" ZINC OR ALUMINUM PLATE CUT AS SHOWN IN SECTION A-A BY SHADED AREA. IF CONSTRUCTION JOINTS IN PARAPETS ARE USED AT THE DEFLECTION JOINTS, ONE SIDE OF JOINT SHALL BE COATED WITH BITUMINOUS PAINT AND PLATE SEPARATORS MAY BE OMITTED.

▨ HORIZ. CONST. JOINT - STRIKE OFF AS SHOWN AND LEAVE ROUGH.



SECTION B-B

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

COMBINATION RAIL TYPE "C1"

SHEET

8

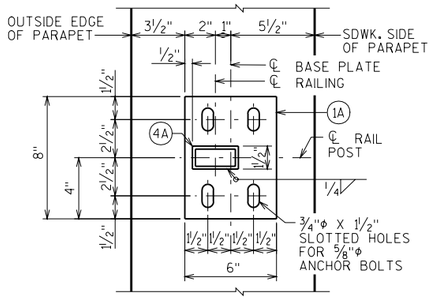
FILE= RAILCOMB.DGN
SCALE = 1.000

11 12
12345

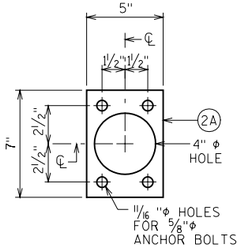
3-02

STATE PROJECT NUMBER

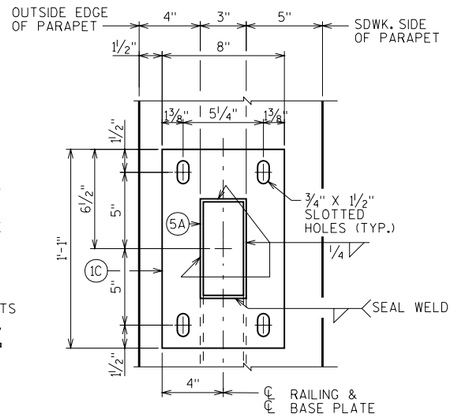
- -



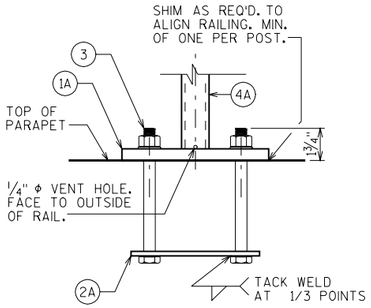
TYPICAL RAIL POST BASE PLATE



ANCHOR PLATE

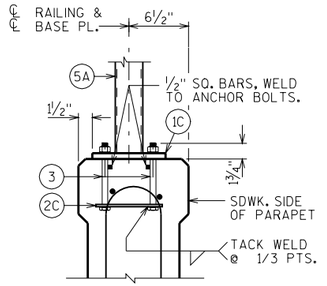


END RAIL BASE PLATE



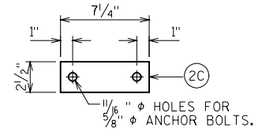
ANCHOR BOLTS FOR RAIL POSTS

NOTE: ANCHOR PLATE NOT REQUIRED WHEN TYPE S ANCHORS ARE USED.



ANCHOR BOLTS FOR END RAIL

NOTE: ANCHOR PLATES NOT REQ'D. WHEN TYPE "S" ANCHORS ARE USED.



END RAIL ANCHOR PLATE

FOR END RAIL BASE PLATES
2 REQ'D. PER END RAIL BASE PLATE

LEGEND

(1A) PLATE ⅝" X 6" X 8" WITH ¾" X 1½" SLOTTED HOLES.

(1C) PLATE ⅝" X 8" X 1'-1" WITH ¾" X 1½" SLOTTED HOLES.

(2A) ¼" X 5" X 7" ANCHOR PLATE WITH 11/16 " ϕ HOLES FOR ANCHOR BOLTS NO. 3.

(2C) ¼" X 2½" X 7¼" ANCHOR PLATE WITH 11/16 " ϕ HOLES FOR ANCHOR BOLTS NO. 3.

(3) ⅝" DIA. X 7½" LONG ASTM F593 TYPE 316 STAINLESS STEEL ANCHOR BOLTS WITH NUT AND WASHERS OF SAME ALLOY GROUP. (ALTERNATE RAIL POST ANCHORAGE - 4 EQUIV. STAINLESS STEEL CONCRETE MASONRY ANCHORS, TYPE S (EPOXY), ⅝" ϕ. MINIMUM PULLOUT CAPACITY OF 15 KIPS. EMBED A MIN. OF 7" FOR RAIL POSTS AND 5" FOR END RAILS.)

(4A) STRUCTURAL TUBING 3" X 1½" X 3/16". PLACE VERTICAL. WELD TO NO. 1 & 5.

(5A) STRUCTURAL TUBING 3" X 1½" X 3/16" RAILS. WELD TO NO. 1 & NO. 4.

(6B) STRUCTURAL TUBING 1" X 1½" X ⅛" PICKETS. WELD TO NO. 5. SPACE AT 6" MAX. ℄ TO ℄ SPACING. PLACE VERTICAL.

(6C) STRUCTURAL TUBING 1" X 1½" X ⅛" PICKETS. WELD TO NO. 11. PLACE VERTICAL.

(8) 5"ϕ SCH. 40 PIPE (5⅝ O.D.) 1½" LONG SLICES. WELD TO NO. 5A.

(9A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. PROVIDE "SLIDING FIT".

(10A) RECTANGULAR SLEEVE FABRICATED FROM 3/16" PLATES. (1'-4" @ FIELD ERECTION JTS.) (1'-4" @ STRIP SEAL EXP. JTS.)

(11A) BAR 2½" X 1" X '- ".

(12) ½" DIA. STAINLESS STEEL BOLT WITH NUT AND LOCKWASHER.

NOTES

BID ITEM SHALL BE "COMBINATION RAILING TYPE "C1" ", WHICH SHALL INCLUDE ALL STEEL ITEMS SHOWN, AND PAINTING.

POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

NO. 1, 2, 8, 9 AND NO. 10 SHALL CONFORM TO THE REQUIREMENTS OF A.S.T.M. A709 GRADE 36. STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF A.S.T.M. A500 GRADE B (NO. 4, NO. 5, AND NO. 6).

ANCHORAGES SHALL BE ACCURATELY PLACED TO PROVIDE CORRECT ALIGNMENT OF RAILING. SET NORMAL TO GRADE.

CUT BOTTOM OF POST TO MAKE POST VERTICAL IN BOTH TRANSVERSE AND LONGITUDINAL DIRECTION.

STEEL SHIMS SHALL BE PROVIDED & USED UNDER BASE PLATES WHERE REQUIRED FOR ALIGNMENT.

FILL BOLT SLOT OPENINGS IN SHIMS AND PLATE NO. 1 AND CAULK AROUND PERIMETER OF PLATE NO. 1 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

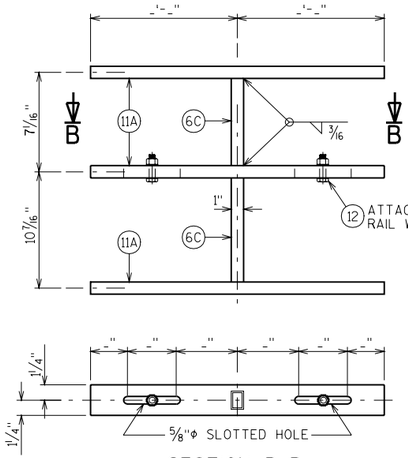
ALL JOINTS AND RECESSES IN CONCRETE PARAPET ARE TO BE VERTICAL.

AFTER FABRICATION, ALL MATERIAL, EXCEPT ANCHORAGE (NO. 2 & 3) & SHIMS SHALL BE PAINTED WITH A THREE COAT ZINC-RICH EPOXY SYSTEM PER WISDOT STANDARD SPECIFICATION, SECTION 517, EPOXY SYSTEM. SHIMS SHALL BE GIVEN ONE COAT OF ZINC RICH PRIMER PAINT. THE FINISH COLOR SHALL BE FEDERAL COLOR NO. , .

¼"ϕ VENT HOLES LOCATED IN TOP RAIL OVER RAIL POSTS AND AT LOW END OF OTHER RAILS.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

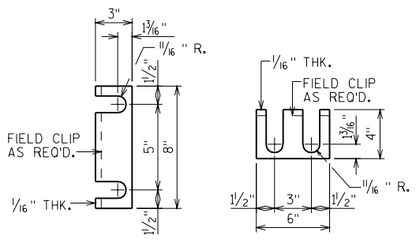
TOUCH-UP PAINTING TO BE DONE AT COMPLETION OF STEEL RAILING INSTALLATION TO THE SATISFACTION OF THE ENGINEER AT NO EXTRA COST.



SECTION B-B

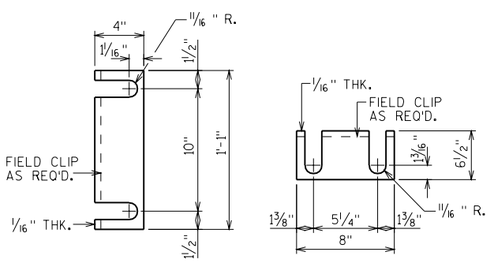
SLEEVE DETAIL

(AT MODULAR EXP. JT.)



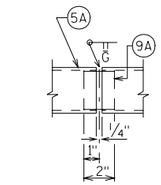
RAIL POST SHIM DETAIL

(2 SETS PER POST)



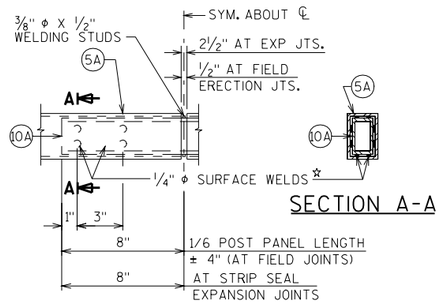
END RAIL SHIM DETAIL

(2 SETS PER POST)



SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



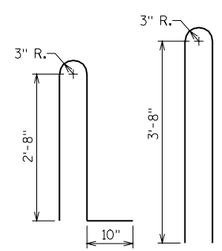
SECTION A-A

FIELD ERECTION JOINT DETAIL

☆MIN. ⅝" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.

BILL OF BARS

BAR MARK	COAT	ABUT.	ABUT.	LENGTH	BEND	LOCATION
R501	X			6-10	X	PARAPET VERT.
R402	X			-		PARAPET HORIZ.
R503	X			8-2	X	PARAPET VERT. @ WINGS
R404	X			-		PARAPET HORIZ. @ WINGS



R501 R503

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

COMBINATION RAIL TYPE "C1"

SHEET

8

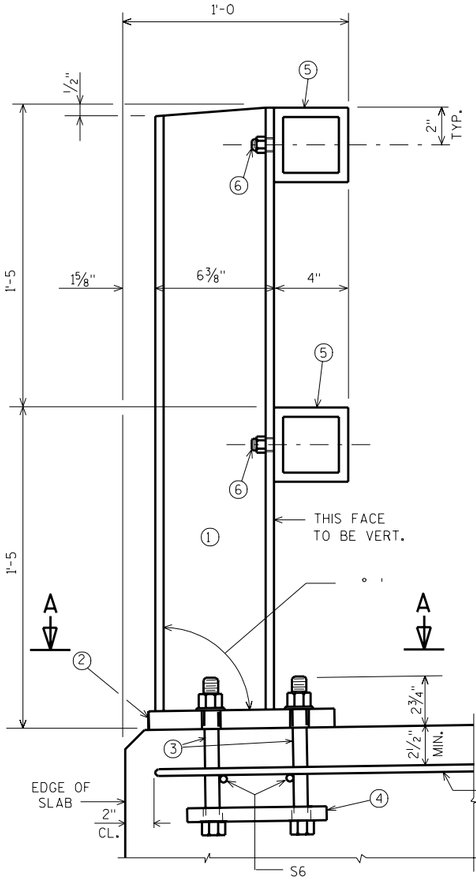
11 12

1 2 3 4 5

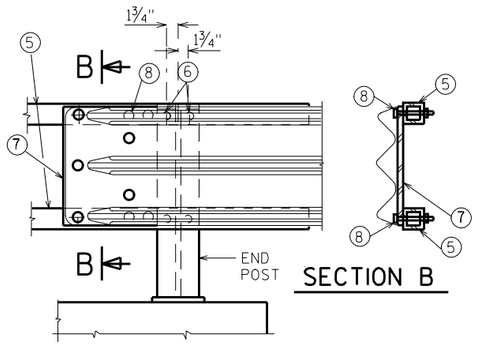
3-02

FILE= RAILCOMB.DGN
SCALE = 1.000

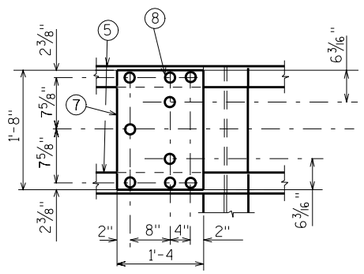
STATE PROJECT NUMBER
- -



SECTION THRU RAILING ON DECK

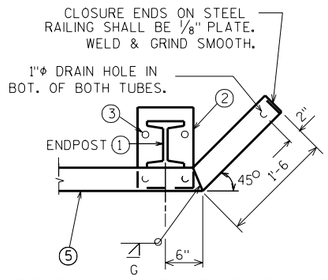


SECTION B

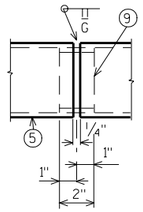


DETAIL AT END POST

(THRIE BEAM RAIL ATTACHMENT)

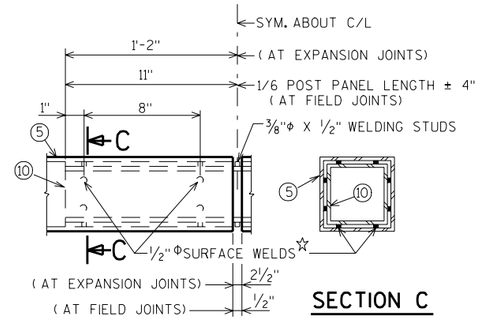


DETAIL FOR END POSTS



SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)



SECTION C

FIELD ERECTION JOINT DETAIL

☆ MIN. 5/8" FLAT SURFACE DIA. PUNCHINGS OR STUDS MAY BE USED AS AN ALTERNATE.

LEGEND

1. W6X25 WITH 1 1/4" DIA. HOLES ON EACH SIDE OF POST FOR STUD NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.
2. PLATE 1" X 9 1/2" X 0'-10", WITH 1 1/16" X 1 1/2" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.
3. A325 - 7/8" DIA. HEX BOLTS (GALVANIZED) WITH A325 NUT & WASHER. 14" LONG AT END POSTS AND AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 15". USE 8" LONG AT ALL OTHER LOCATIONS. 4 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING.
4. 1/4" X 8" X 8" FLAT BAR, WITH 15/16 " DIA. HOLES FOR ANCHOR BOLTS NO. 3.
5. TS 4X4X. 25 STRUCTURAL TUBING, CONFORMING TO A.S.T.M. DESIGNATION A501 OR A500 GRADE B ATTACH TO NO. 1 WITH TWO STUDS NO. 6.
6. 5/8" DIA. X 1 1/2" LG. SHOP WELDED STUDS, WITH HEX. NUT AND 2" WASHERS.
7. PLATE 3/8" X 1'-4" X 1'-8". BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACED SYM. ABOUT TUBES NO. 5.
8. 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5 FOR 7/8" DIA. A325 BOLTS W/HEX NUTS AND WASHERS.
9. SQUARE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT" WITH A MINIMUM OUT TO OUT DIMENSION OF 3 13/32 ".
10. TS 3 X 3 X .25 X (2'-4" AT EXPANSION JOINTS) & (1'-10" AT FIELD JOINTS) LONG. PROVIDE 1/2 DIA. SURFACE WELDS ON ALL SIDES AS SHOWN. GRIND WELDS TO FIT FREE INTO I.D. OF NO. 5. PROVIDE 3/8" DIA. X 1/2" WELDING STUDS ON TOP AND BOTTOM SURFACES AT CENTERLINE.

GENERAL NOTES

BID ITEM SHALL BE "TUBULAR RAILING TYPE 'F'", WHICH INCLUDES ALL ITEMS SHOWN.

RAILING SHALL BE FABRICATED IN LENGTHS THAT INCLUDE 3 OR 4 POSTS.

POSTS BASE PLATES, NO. 2, SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL, EXCEPT ANCHORAGE DETAIL (NO. 4) SHALL BE GALVANIZED AFTER FABRICATION.

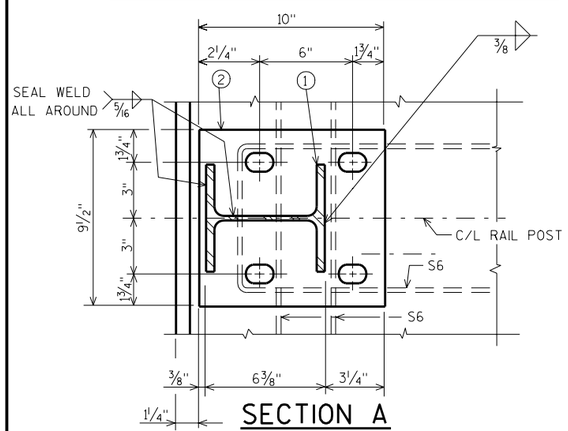
FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

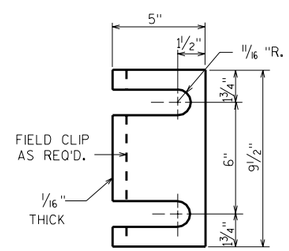
STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.

PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.

⚠ TIE TO TOP MAT OF STEEL.

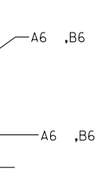


SECTION A

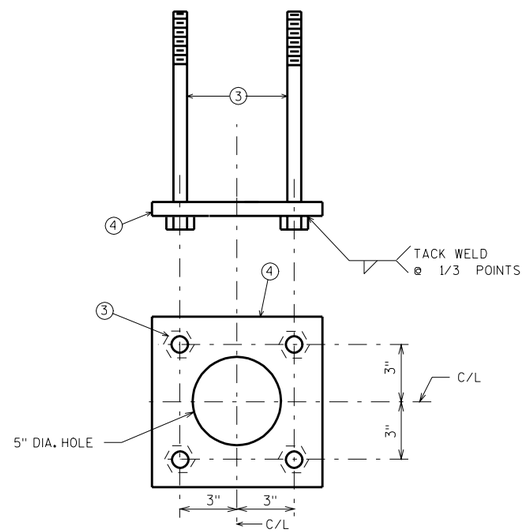


POST SHIM DETAIL

(4 PER POST)



SECTION AT TOP OF WING



ANCHORAGE DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

TUBULAR RAILING TYPE 'F'

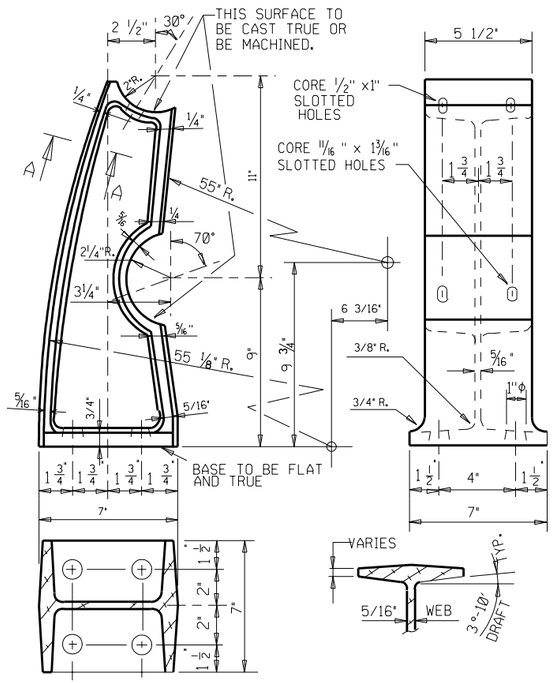
SHEET

8

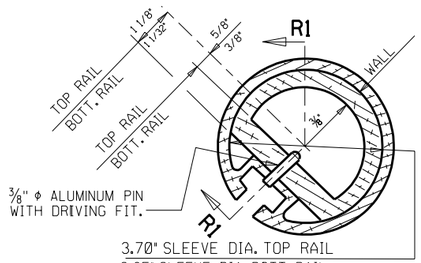
FILE= RAILF.DGN
SCALE = .333

7/01

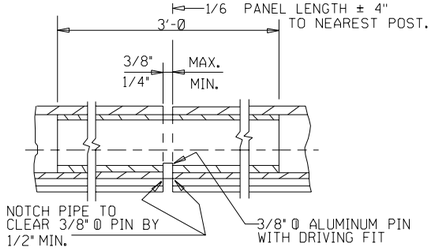
STATE PROJECT NUMBER
- -



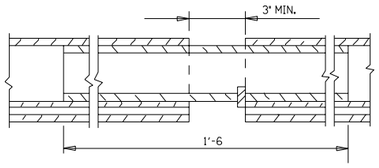
ALUMINUM POST CASTING



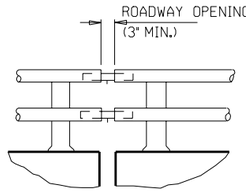
RAIL SPLICE DETAIL



SECTION R1

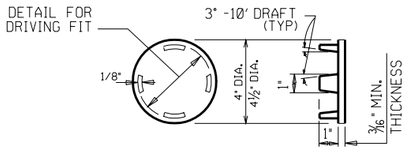


SLEEVE DETAIL AT ABUTMENT

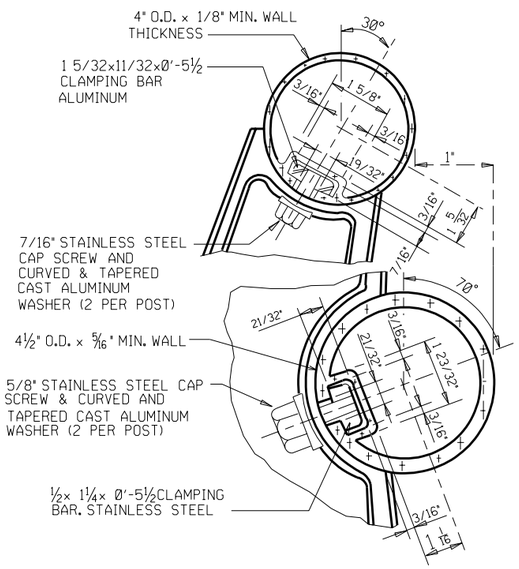


DETAIL AT RAIL OPENINGS

ALL SLEEVE DETAILS SAME AS "RAIL SPLICE DETAIL" UNLESS SHOWN OTHERWISE

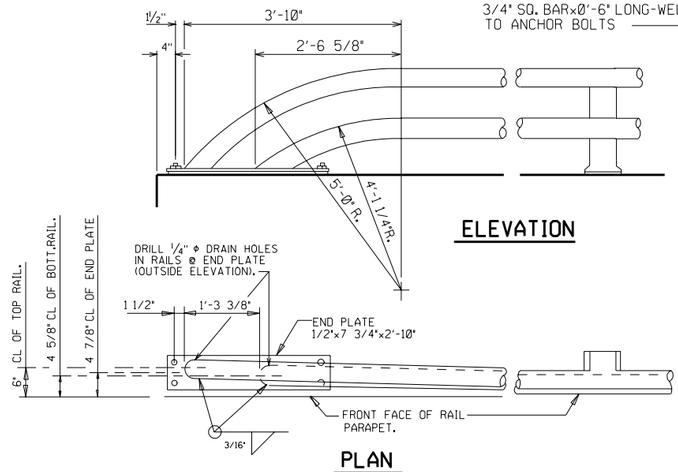


RAIL CLOSURE CAP DETAIL

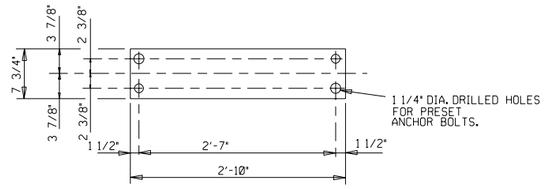


DETAIL OF RAIL ATTACHMENT TO POST

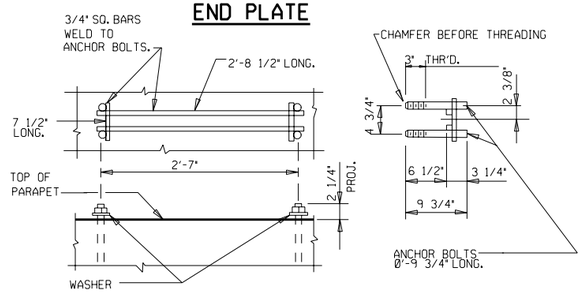
NOTES: MAX. REDUCTION IN DIAMETER OF BENT SECTION SHALL BE 3% WALL THICKNESS OF TUBING SHOWN ABOVE SHALL BE MIN. NOMINAL AVERAGE WALL THICKNESS.
MAX. REDUCTION IN SLOT WIDTH IN BENT TUBING SHALL BE 3/16".



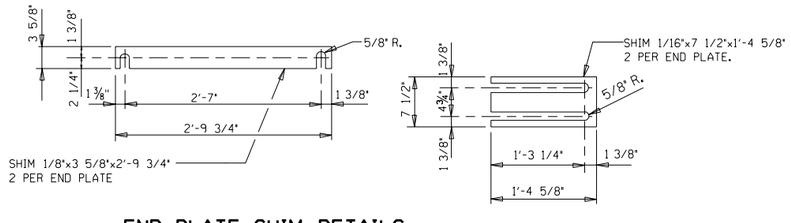
DETAIL OF RAIL BEND AT ABUTMENTS



END PLATE

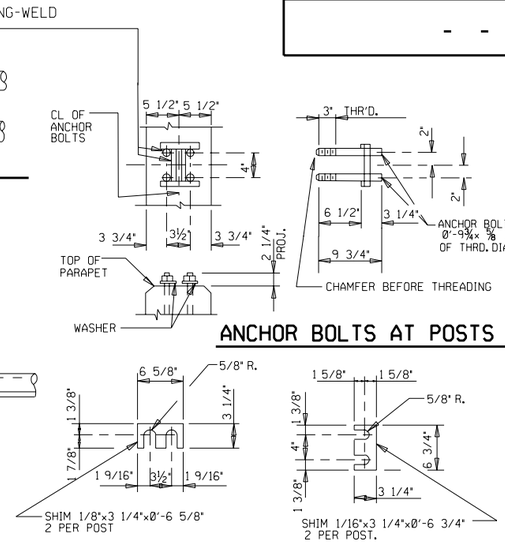


ANCHOR BOLTS AT END PLATE



END PLATE SHIM DETAILS

SHIMS SHALL CONFORM TO SAME MATERIAL AS POSTS



ANCHOR BOLTS AT POSTS

POST SHIM DETAILS

GENERAL NOTES

BID ITEM SHALL BE TUBULAR RAILING, TYPE "H" WHICH INCLUDES ALL ITEMS SHOWN.

THE SHANK AND ROOT DIAMETER OF THREAD FOR ANCHOR BOLTS SHALL BE A MIN. OF ⅝".

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE STAINLESS STEEL.

SHIMS SHALL CONFORM TO SAME MATERIAL AS POSTS.

RAILINGS SHALL BE FABRICATED IN 2 AND 3 PANEL LENGTHS.

RAILING POSTS SHALL BE SET NORMAL TO GRADE LINE.

ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG CENTERLINE OF THE POST BASE.

SHIMS SHALL BE USED UNDER POSTS AND END PLATES WHERE REQ'D. FOR ALIGNMENT.

FILL ALL EXPOSED OPENINGS BETWEEN SHIMS AND POST ANCHOR BOLT HOLES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

RAILS SHALL BE BUILT STRAIGHT AND SPRUNG INTO PLACE FOR STRUCTURES CURVED UP TO 3°. FOR STRUCTURES CURVED GREATER THAN 3°, RAILS SHALL BE CURVED TO FIT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

TUBULAR RAILING TYPE 'H' (ALUM.)

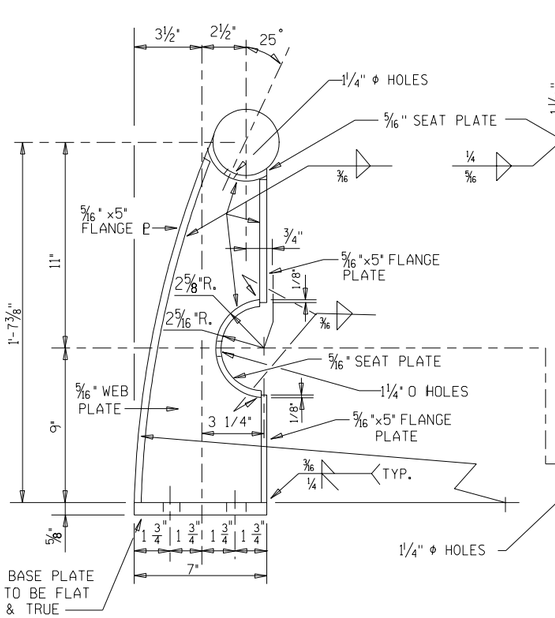
SHEET

8

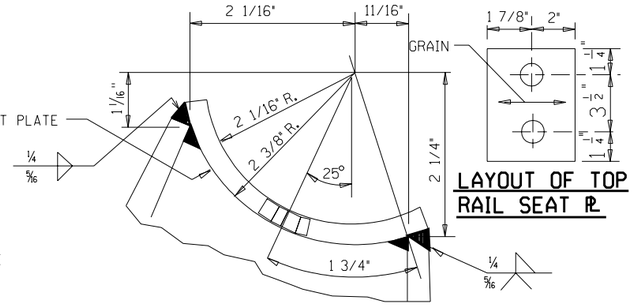
FILE= RAILHALM.DGN
SCALE =

STATE PROJECT NUMBER

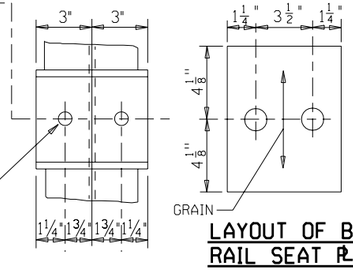
- -



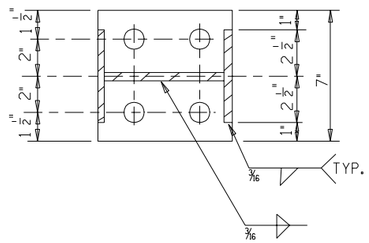
TOP RAIL SEAT PLATE



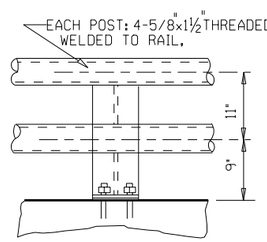
LAYOUT OF TOP RAIL SEAT PL.



LAYOUT OF BOT. RAIL SEAT PL.



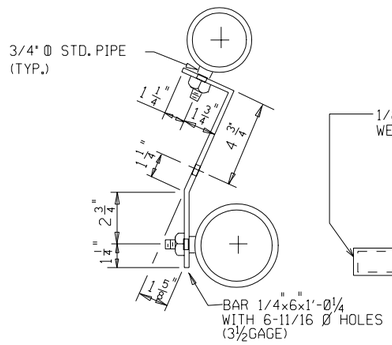
STEEL POST DETAILS



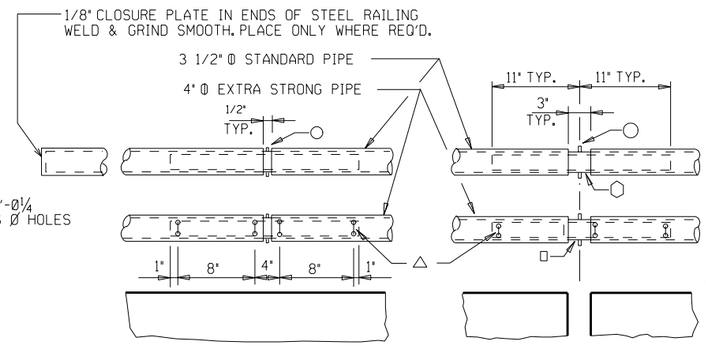
RAIL TO POST CONN.

ALL SLEEVE DETAILS SAME AS "FIELD ERECTION JOINT DETAIL" UNLESS SHOWN OTHERWISE

- ◯ 5/16" x 3/8" WELDED STUDS
- ⬡ 3" ϕ STD. PIPE x 1'-10 LONG
- □ 3" ϕ EXTRA STRONG PIPE x 1'-10 LONG
- △ ½" ϕ WELD BEADS AT 1/3 PTS. ON PIPE 11" CIRCUMF. GRIND BEADS SO THAT SLEEVE FITS FREELY IN THE I.D. OF 4" ϕ EXTRA STRONG PIPE.

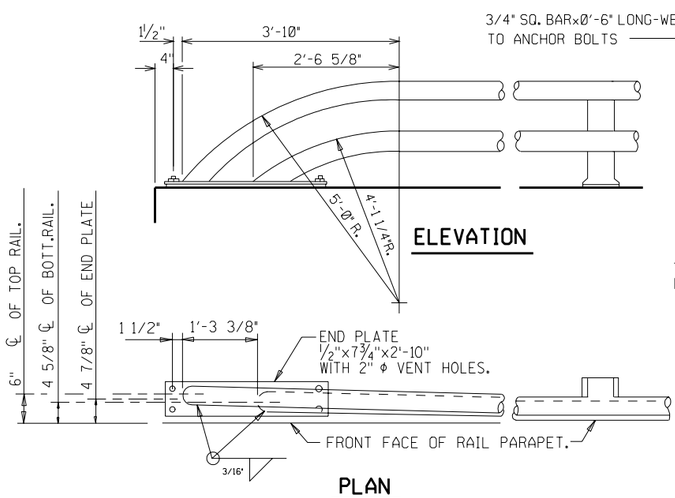


SHIPPING BAR



FIELD ERECTION JOINT DETAIL

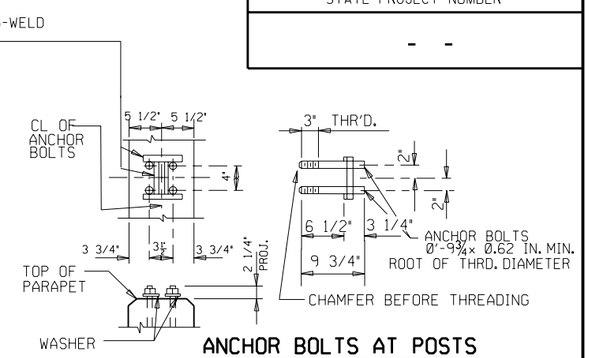
DETAIL AT RAIL OPENING



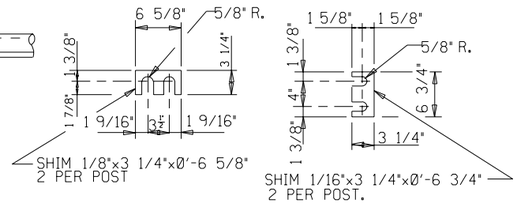
ELEVATION

PLAN

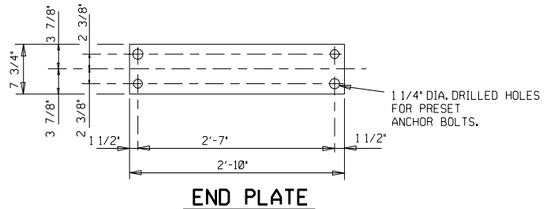
DETAIL OF RAIL BEND AT ABUTMENTS



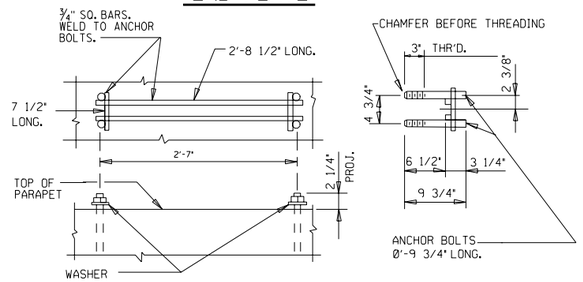
ANCHOR BOLTS AT POSTS



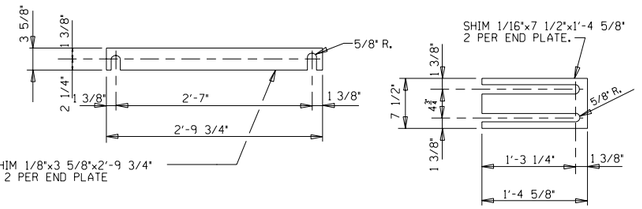
POST SHIM DETAILS



END PLATE



ANCHOR BOLTS AT END PLATE



END PLATE SHIM DETAILS

SHIMS SHALL CONFORM TO SAME MATERIAL AS POSTS

GENERAL NOTES

BID ITEM SHALL BE TUBULAR RAILING, TYPE "H" WHICH INCLUDES ALL ITEMS SHOWN.

THE SHANK AND ROOT DIAMETER OF THREAD FOR ANCHOR BOLTS SHALL BE A MIN. OF 5/8".

ANCHOR BOLTS, NUTS AND WASHERS SHALL BE EITHER STAINLESS STEEL OR ASTM A307. IF A307 IS USED ELECTRO-GALVANIZE NUTS, WASHERS & TOP 3½" OF ANCHOR BOLTS.

CLOSURE ENDS ON STEEL RAILING SHALL BE ⅛" PLATE. WELD AND GRIND SMOOTH.

RAILINGS SHALL BE FABRICATED IN 2 AND 3 PANEL LENGTHS.

RAILING POSTS SHALL BE SET NORMAL TO GRADE LINE.

ALL POST SPACINGS ARE MEASURED HORIZONTALLY ALONG CENTERLINE OF THE POST BASE.

SHIMS SHALL BE USED UNDER POSTS AND END PLATES WHERE REQ'D. FOR ALIGNMENT.

FILL ALL EXPOSED OPENINGS BETWEEN SHIMS AND POST ANCHOR BOLT HOLES WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

RAILS, POSTS & SHIMS SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709, GRADE 36.

ALL MATERIALS, EXCEPT ANCHORAGES, SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.

RAILS SHALL BE BUILT STRAIGHT AND SPRUNG INTO PLACE FOR STRUCTURES CURVED UP TO 3°. FOR STRUCTURES CURVED GREATER THAN 3°, RAILS SHALL BE CURVED TO FIT.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

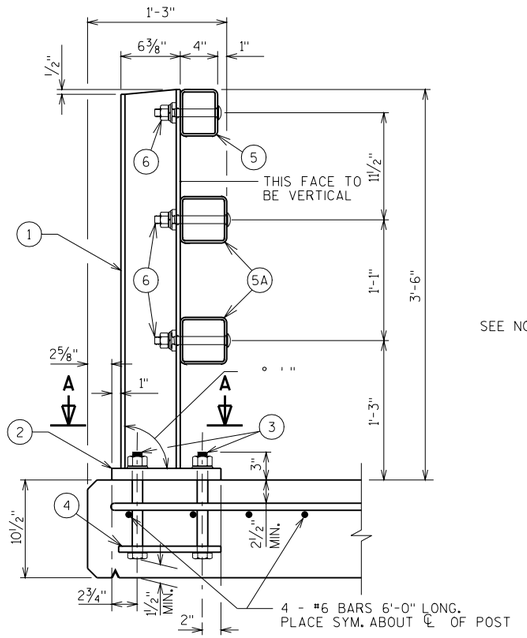
TUBULAR RAILING TYPE 'H' (STEEL)

SHEET

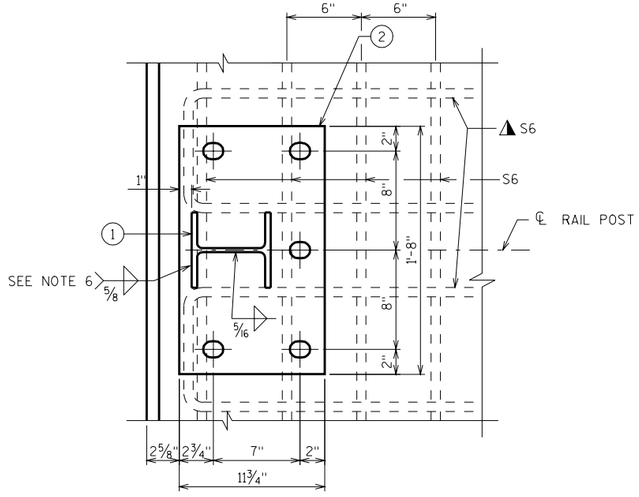
8

FILE= RAILHSTL.DGN
SCALE = :1

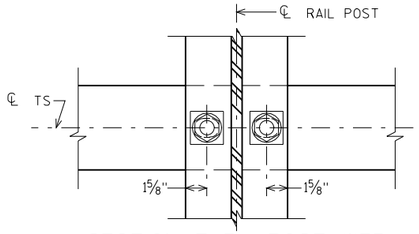
1/03



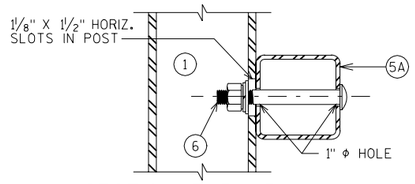
SECTION THRU RAILING ON DECK



SECTION A



SECTION THRU POST WEB



SECTION THRU RAIL

NOTE: CONNECTIONS AT LOWER RAILS SHOWN. CONNECTIONS AT TOP RAIL SIMILAR.

TYPICAL RAIL TO POST CONNECTIONS

LEGEND

(1) W6 x 25 WITH 1 1/8" X 1 1/2" HORIZ. SLOTS ON EACH SIDE OF POST FOR BOLT NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.

(2) PLATE 1 1/4" x 11 3/4" x 1'-8" WITH 15/16" X 1 5/8" SLOTTED HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN. SLOTS PARALLEL TO SHORT SIDE OF PLATE.

(3) ASTM A449 - 1 1/8" DIA. ANCHOR BOLTS WITH NUT AND HARDENED WASHER (ALL GALVANIZED). 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLTS BEFORE THREADING. USE 1'-9" LONG IN ABUTMENT WINGS. AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 16" USE 1'-3" LONG. USE 10 3/4" LONG AT ALL OTHER LOCATIONS. (AN EQUIVALENT THREADED ROD WITH NUTS AND HARDENED WASHERS MAY BE SUBSTITUTED FOR ANCHOR BOLTS IN WINGS IF REQ'D. FOR CONSTRUCTIBILITY.)

(4) 5/8" x 11" x 1'-8" ANCHOR PLATE (GALVANIZED) WITH 13/16" DIA. HOLES FOR ANCHOR BOLTS NO. 3

(5) TS 5 x 4 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

(5A) TS 5 x 5 x 0.25 STRUCTURAL TUBING. ATTACH TO NO. 1 WITH NO. 6.

(6) 7/8" DIA. A325 ROUND HEAD BOLT WITH NUT, 3/16" X 1 5/16" X 1 5/8" WASHER, AND LOCK WASHER (2 REQ'D. AT EACH RAIL TO POST LOCATION.)

(7) PLATE 3/8" x 1'-4" X 1'-8". BOLT TO RAIL AS SHOWN IN DETAIL. REQUIRED AT THRIE BEAM GUARD RAIL ATTACHMENTS ONLY. PLACE SYMMETRICALLY ABOUT TUBES NO. 5A.

(8) 1" DIA. HOLES IN PLATE NO. 7 & TUBES NO. 5A FOR 7/8" DIA. A325 BOLTS WITH HEX NUTS AND WASHERS. 6 HOLES IN TUBES AND PLATE NO. 7.

(9) SPLICE SLEEVE FABRICATED FROM 1/4" PLATE. PROVIDE "SLIDING FIT".

(10) 3/8" X 3 5/8" X 2'-4" PLATE. 2 PER RAIL. USED IN NO. 5 & 5A.

(10A) 3/8" X 2 5/8" X 2'-4" PLATE USED IN NO. 5, 3/8" X 3 5/8" X 2'-4" PLATE USED IN NO. 5A. 2 PER RAIL.

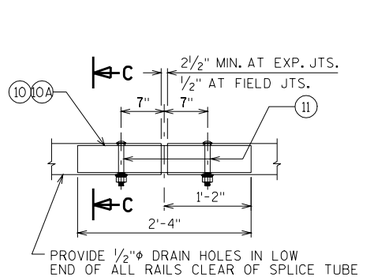
(11) 7/8" Φ A325 ROUND HEAD BOLT WITH NUT, WASHER, AND LOCK WASHER. USE 15/16" X 1 1/4" LONGIT. SLOTTED HOLES AT FIELD JOINTS AND 15/16" X 2 1/4" MIN. LONGIT. SLOTTED HOLES AT EXP. JOINTS IN PLATE NO. 10A.

(12) 7/8" DIA. X 1 1/2" LONG THREADED SHOP WELDED STUDS (3 REQ'D).

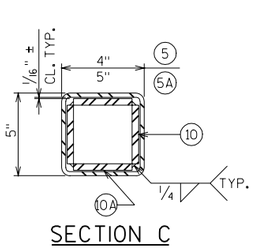
GENERAL NOTES

1. BID ITEM SHALL BE "TUBULAR RAILING TYPE "M" WHICH INCLUDES ALL ITEMS SHOWN.
2. RAIL POST AND BASE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 50. HOLLOW RAILING STRUCTURAL TUBING SHALL CONFORM TO THE REQUIREMENTS OF ASTM A500 GRADE B OR C WITH A CERTIFIED FY = 50 KSI. ANCHOR PLATES, AND SPLICE TUBE PLATES SHALL CONFORM TO THE REQUIREMENTS OF ASTM A709 GRADE 36.
3. THE NUT SECURING THE POST BASE PLATE TO THE CONCRETE SHALL BE TIGHTENED TO A SNUG FIT AND GIVEN AN ADDITIONAL 1/8 TURN.
4. RAILS SHALL BE CONTINUOUS OVER A MINIMUM OF FOUR (4) POSTS WITHOUT SPLICES WHERE POSSIBLE. RAILS SHALL BE SPLICED IN A PANEL OVER EXPANSION JOINTS.
5. ENDS OF TUBE SECTIONS SHALL BE SAWED. GRIND SMOOTH EXPOSED EDGES. ALL CUT ENDS SHALL BE TRUE AND SMOOTH.
6. WELD IS THE SAME ON BOTH FLANGES. FLANGE WELD DOES NOT REQUIRE MAGNETIC PARTICLE TESTING.
7. FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 2 AND CAULK AROUND PERIMETER OF PLATE NO. 2 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER. STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.
8. POST BASE PLATES SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.
9. FOR RAILING NOT TO BE PAINTED, ALL MATERIAL SHALL BE GALVANIZED AFTER FABRICATION. PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 6 BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.
10. FOR RAILING TO BE PAINTED, ALL MATERIAL EXCEPT ANCHORAGE DETAIL (NO. 3 & 4) SHALL BE PAINTED WITH A THREE-COAT ZINC RICH EPOXY SYSTEM. PRIOR TO PAINTING, ALL STEEL RAILING POSTS & STEEL TUBING SHALL BE GIVEN A NO. 11 NEAR WHITE BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.
11. THIS RAILING MEETS NCHRP REPORT 350 EVALUATION CRITERIA FOR TEST LEVEL 4 (TL-4).

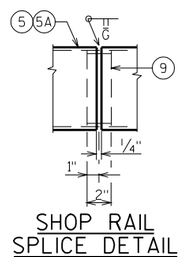
⚠ TIE TO TOP MAT OF STEEL.



FIELD ERECTION JOINT DETAIL

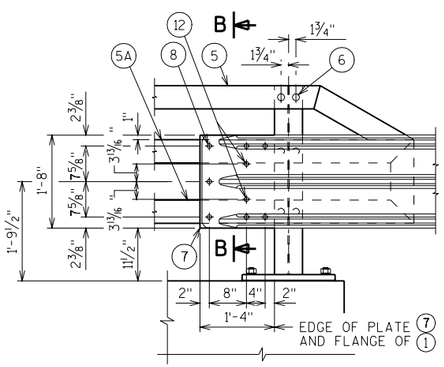


SECTION C



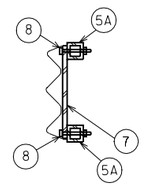
SHOP RAIL SPLICE DETAIL

(LOCATION MUST BE SHOWN ON SHOP DRAWINGS)

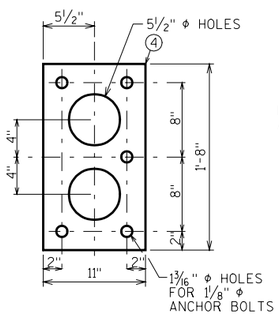


DETAIL AT END POST

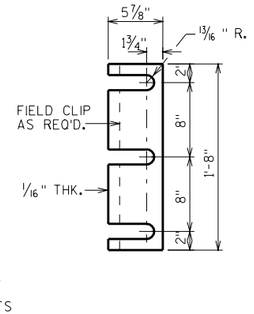
(THRIE BEAM RAIL ATTACHMENT)



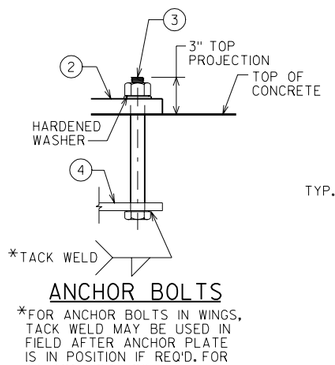
SECTION B



ANCHOR PLATE

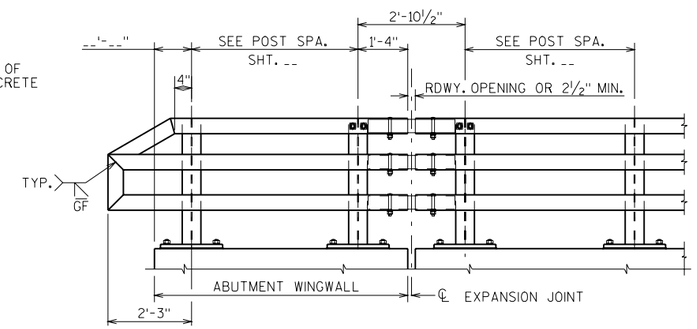


POST SHIM DETAIL



ANCHOR BOLTS

*FOR ANCHOR BOLTS IN WINGS, TACK WELD MAY BE USED IN FIELD AFTER ANCHOR PLATE IS IN POSITION IF REQ'D. FOR CONSTRUCTIBILITY.



PART ELEVATION OF RAILING

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

TUBULAR STEEL RAILING TYPE M

SHEET

STATE PROJECT NUMBER

- -

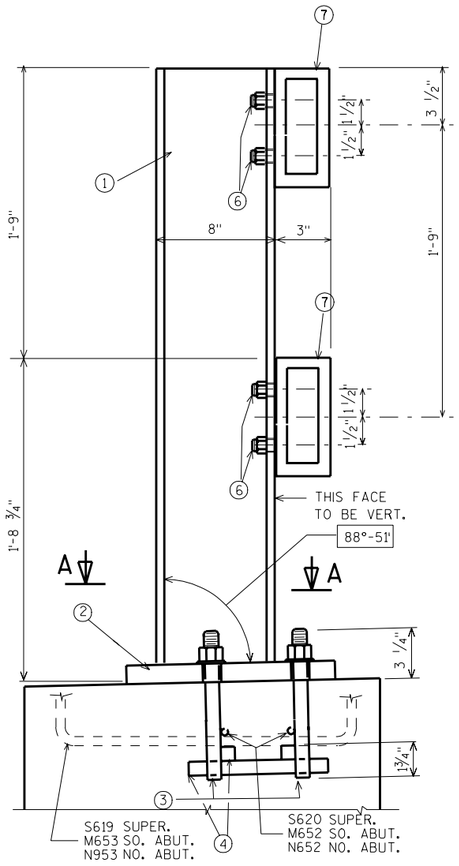
8

FILE= RAILM.DGN
SCALE =

1/03

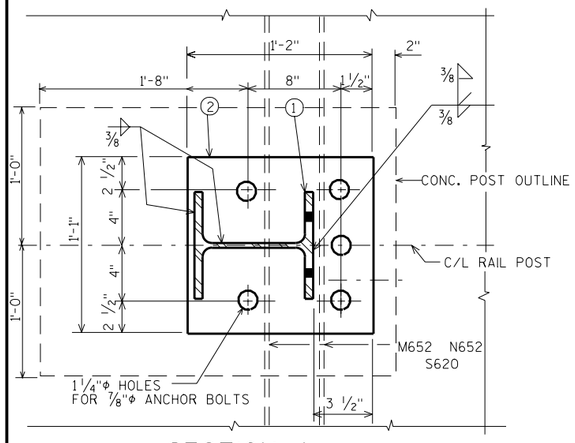
STATE PROJECT NUMBER

- -

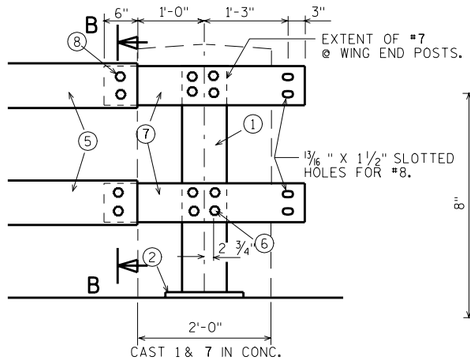


SECTION THRU RAILING @ ABUT. WING

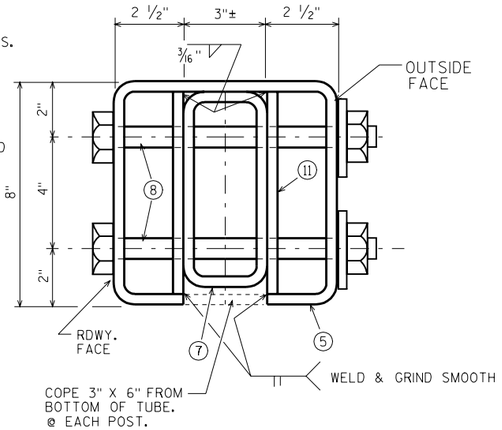
POST DETAILS SIMILAR ON BRIDGE



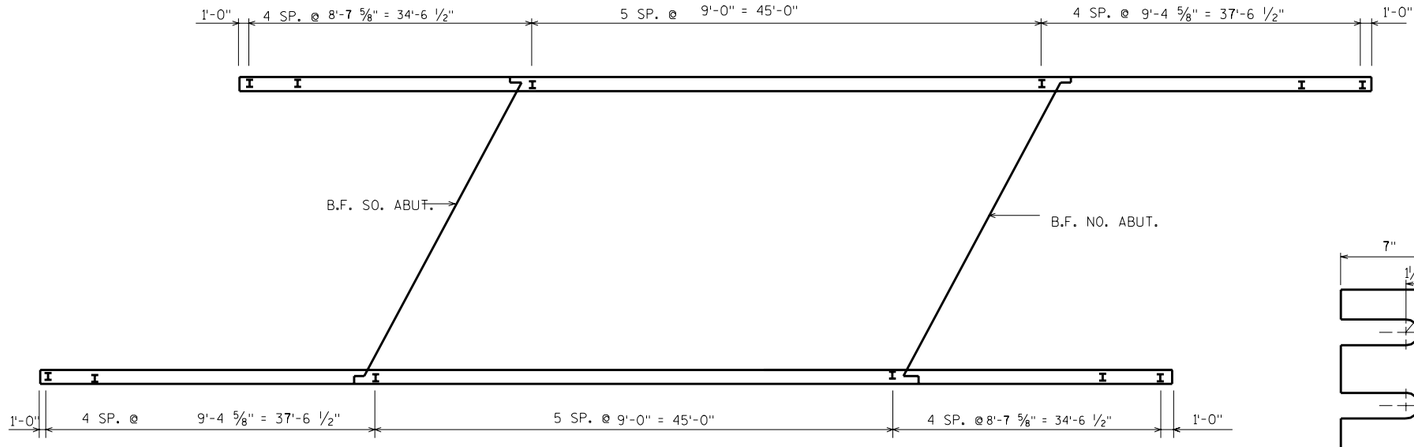
SECTION A



STEEL POST CONN. DETAIL



SECTION B



RAIL POST (W8 X 31) SPACING

LEGEND

(1) W8X31 WITH 1 1/8"DIA. HOLES ON EACH SIDE OF POST FLANGE FOR STUD NO. 6. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF ROADWAY. PLACE POST VERTICAL. PLACE POSTS NORMAL TO GRADE LINE.

(2) PLATE 1 5/8"X13"X1'-2", WITH 5 1 1/4"ϕ HOLES FOR ANCHOR BOLTS NO. 3. WELD TO NO. 1 AS SHOWN.

(3) A449 OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION. ANCHOR BOLT 7/8" DIA. LONG (MIN. YIELD OF 92 K.S.I. AND ELONGATION OF 14%) WITH A325 NUT AND WASHER. 5 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 2. CHAMFER TOP OF BOLT BEFORE THREADING.

(4) BAR 3/4" SQ. X 1'-0" LONG. WELD TO ANCHOR BOLT NO. 3.

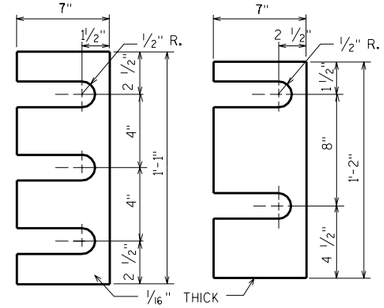
(5) TS 8X8X. 25 STRUCTURAL TUBING, CONFORMING TO A.S.T.M. DESIGNATION A500, GRADE B. ATTACH TO NO. 7 WITH (6) TS 8

(6) 5/8" DIA. X 1 1/2" LG. SHOP WELDED STUDS, WITH HEX. NUT AND 2" WASHERS. 8 PER POST REQ'D. (4 REQ'D. AT EACH LOCATION) WELD TO #7

(7) TS 7X3X. 375 STRUCTURAL TUBING, CONFORMING TO A.S.T.M. DESIGNATION A500, GRADE B. ATTACH TO NO. 1 WITH STUDS. PROVIDE 13/16" X 1 1/2" SLOTTED HOLES FOR #8

(8) 3/4" ϕ H.S. BOLTS WITH LOCKWASHERS & HEX NUTS.

(11) 3/8" X 7 1/4" X 6" PLATE WELD TO # 5 AS SHOWN



POST SHIM DETAIL

(2 EACH PER POST)

GENERAL NOTES

BID ITEM SHALL BE" TUBULAR STEEL RAILING, SPECIAL, WHICH INCLUDES ALL ITEMS SHOWN.

POSTS BASE PLATES, NO. 2, SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A36 UNLESS NOTED OTHERWISE.

STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQ'D. FOR ALIGNMENT.

CAULK EXPOSED OPENINGS BETWEEN CONCRETE POSTS & TUBULAR RAILING.

ALL RAILINGS, EXPOSED BOLTS & NUTS SHALL BE PAINTED BLACK PER BID ITEM "PAINTING VINYL SYSTEM".

ALL MEMBERS INCLUDING UPPER 4" OF NO. 3 SHALL BE GALVANIZED AFTER FABRICATION.

PRIOR TO GALVANIZING, ALL STEEL RAILING SHALL BE GIVEN A NO. 6 COMMERICAL BLAST CLEANING BY S.S.P.C. SPECIFICATIONS. BLAST CLEANING IS NOT REQUIRED FOR COLD FORMED TUBING (5) & (7). EXCEPT TO REMOVE WELDING SLAG & IMPERVIOUS SUBSTANCES.

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

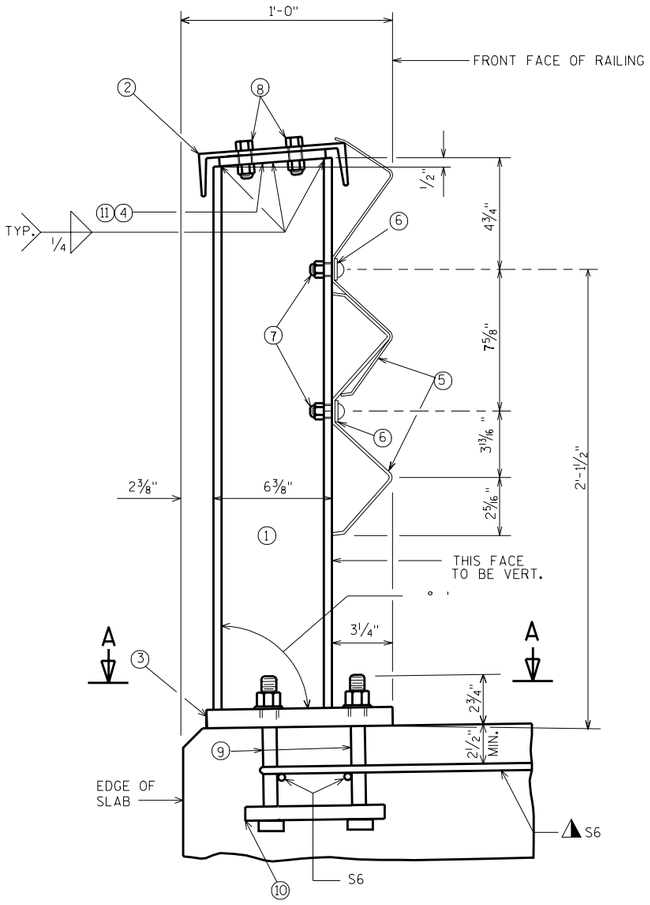
TUBULAR RAILING

SHEET

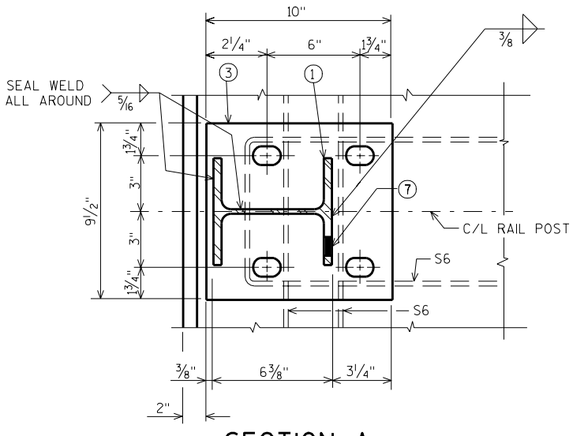
8

FILE= RAILTUBE.DGN
SCALE = :4

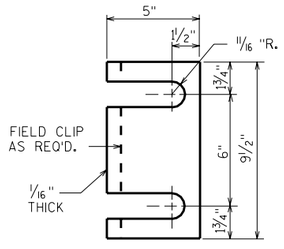
9-1-94



SECTION THRU RAILING

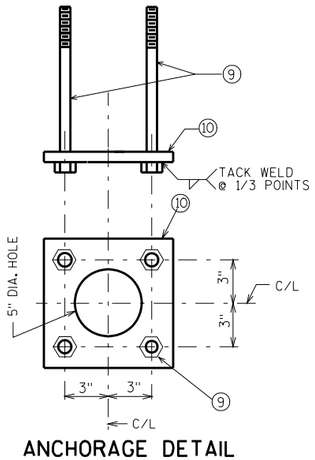


SECTION A

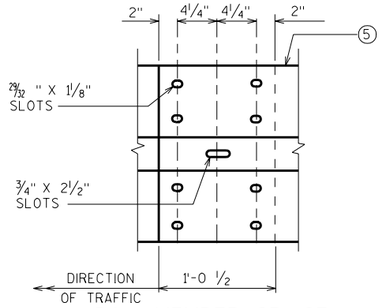


POST SHIM DETAIL

(4 PER POST)



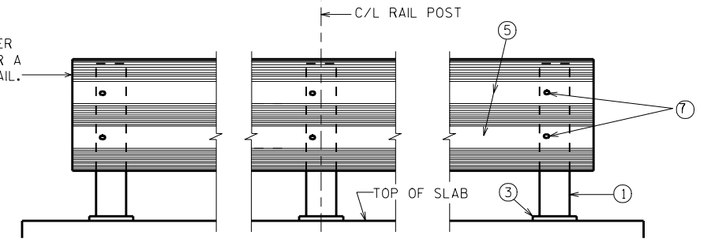
ANCHORAGE DETAIL



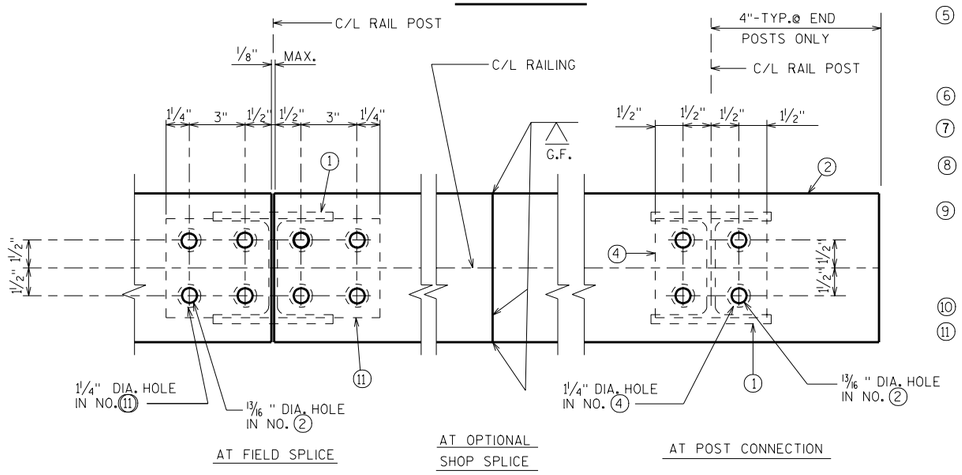
RAIL MEMBER SPLICE

5/8" DIA. BUTTON HEAD OVAL SHOULDER BOLTS WITH HEX. NUTS AT ALL SLOTS.

AT END POSTS, RAIL MEMBER SHALL HAVE PROVISIONS FOR A SPLICE TO A THRIE BEAM RAIL.



ELEVATION



CHANNEL MEMBER DETAILS

LEGEND

1. W6X25 WITH 2 - 3/4" X 2 1/2" VERTICAL SLOTS ON ONE SIDE OF POST FOR BOLT NO.7. CUT BOTTOM OF POST TO MATCH CROSS SLOPE OF RDWY. PLACE POSTS VERTICAL AND NORMAL TO GRADE LINE.
2. C8 X 11.5, WITH 13/16 " DIA. HOLES, ATTACH TO NO. 4 WITH BOLTS NO.8. ATTACH CONTINUOUSLY TO A MIN. OF FOUR POSTS AND A MAX. OF EIGHT POSTS.
3. BASE PLATE 1"X9 1/2"XO'-10", WITH 1 1/16"X1 1/2" SLOTTED HOLES FOR ANCHOR BOLTS NO. 9. WELD TO NO. 1 AS SHOWN.
4. PLATE 1/2" X 5 3/4" X 0'-6", WITH 1 1/4" DIA. HOLE FOR BOLTS NO.8. WELD TO NO.1 AS SHOWN.
5. CORRUGATED SHEET BEAM, CONFORMING TO A.A.S.H.T.O. DESIGNATION M 180-CLASS A, TYPE 2. 'THRIE 'GUARD RAIL OR EQUAL MAY BE USED IN LIEU OF THE DOUBLE UNIT PLATE BEAM SHOWN. ATTACH TO NO.1 WITH BOLTS NO.7.
6. 1 3/4" X 3" MOUNTING BOLT WASHER. EIGHT GAGE GALVANIZED,
7. 5/8" DIA. BUTTON HEAD RAIL MOUNTING BOLT WITH ROUND WASHER AND NUT. 2 PER POST REQ'D.
8. 5/8" DIA. X 2" LG. HEX. BOLTS WITH NUT AND TWO WASHERS EACH. 4 REQ'D. PER POST CONNECTION, 8 REQ'D. PER SPLICE.
9. A325 - 7/8" HEX BOLTS (GALVANIZED) WITH A325 NUT AND WASHER. 14" LONG AT END POSTS AND AT POSTS ON CONCRETE SLAB SUPERSTRUCTURES WHERE THE SLAB THICKNESS IS > 15". USE 8" LONG AT ALL OTHER LOCATIONS. 4 REQ'D. PER POST. THREAD 3" AND PLACE NORMAL TO PLATE NO. 3. CHAMFER TOP OF BOLTS BEFORE THREADING.
10. 1/4"X8"X8" FLAT BAR, WITH 15/16 " DIA. HOLES FOR ANCHOR BOLTS NO. 9.
11. PLATE, 1/2" X 5 3/4" X 0'-11 1/2 WITH 1 1/4" DIA. HOLES FOR BOLTS NO.8. WELD THE SAME AS NO.4.

GENERAL NOTES

BID ITEM SHALL BE "STEEL RAILING TYPE "W" WHICH SHALL INCLUDE ALL ITEMS BETWEEN LONGIT. LIMITS OF NO.5 SHOWN IN ELEVATION.

POST BASE PLATES, NO. 3, SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL, EXCEPT ANCHORAGE DETAIL (NO. 9 & 10) SHALL BE GALVANIZED AFTER FABRICATION.

FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 3 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709 GRADE 36 UNLESS NOTED OTHERWISE.

SHIM PLATES 6"X 1/16" X 6" MAY BE USED BETWEEN TOP OF POST AND CHANNEL MEMBER TO ACHIEVE VERTICAL ALIGNMENT.

STEEL POST SHIMS MAY BE USED UNDER POSTS WHERE REQUIRED FOR ALIGNMENT.

PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & CHANNELS SHALL BE GIVEN A NO.6 COMMERCIAL BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.

RAIL MEMBERS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC AND THE UPPER RAIL SHALL LAP THE LOWER RAIL.

▲ TIE TO TOP MAT OF STEEL.

STATE PROJECT NUMBER

- -

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

STEEL RAILING TYPE "W"

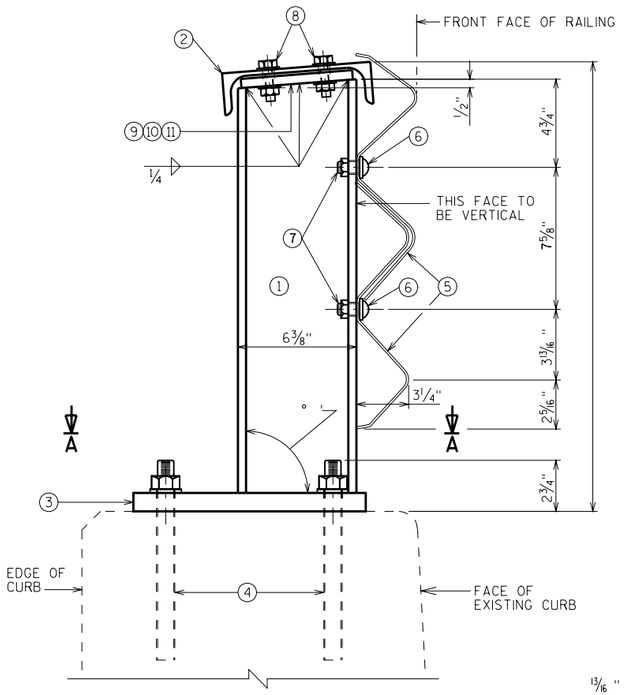
SHEET

8

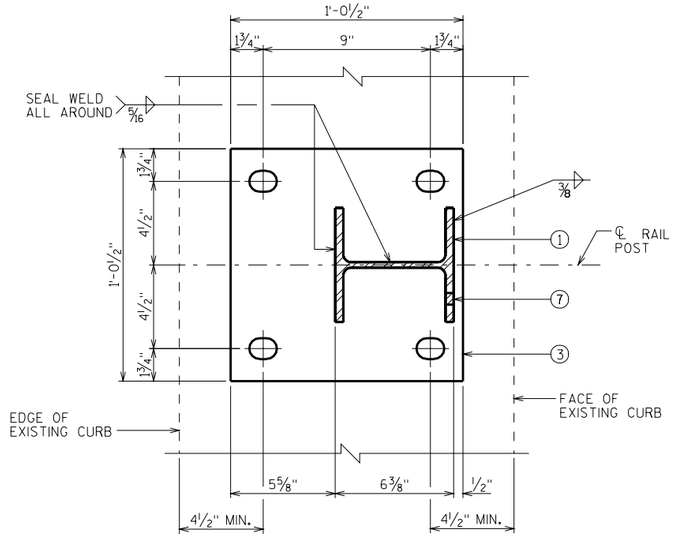
FILE= RAILW.DGN
SCALE = .333

7-01

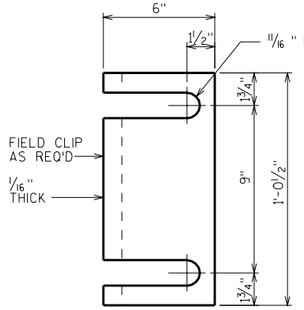
STATE PROJECT NUMBER
- -



SECTION THRU RAILING



SECTION A-A

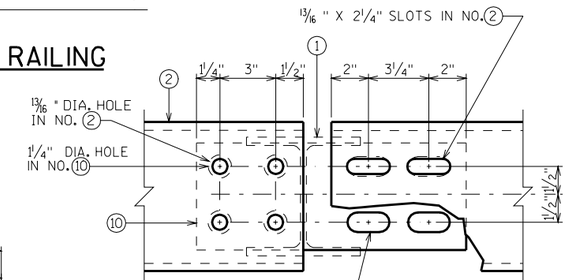


POST SHIM DETAIL

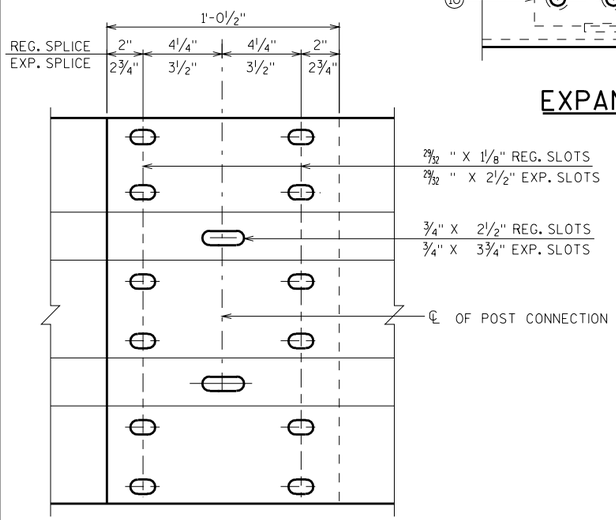
(4 PER POST)

LEGEND

1. W6X25 WITH 2 - 3/4" X 2 1/2" VERTICAL SLOTS ON ONE SIDE OF POST FLANGE FOR BOLT NO. 7. CUT BOTTOM OF POST TO ANGLE SHOWN. PLACE POSTS VERTICAL AND NORMAL TO GRADE LINE.
2. C8 X 11.5 WITH 13/16 " DIA. HOLES. ATTACH TO NO. _ WITH BOLTS NO. 8. ATTACH CONTINUOUSLY TO A MIN. OF FOUR POSTS AND A MAX. OF EIGHT POSTS.
3. BASE PLATE 1" X 1'-0 1/2" X 1'-0 1/2" WITH 1 1/16" X 1 1/2" SLOTTED HOLES FOR ANCHOR BARS NO. 4. WELD TO NO. 1 AS SHOWN.
4. 7/8" DIA. CONCRETE MASONRY ANCHOR TYPE "S" (EPOXY) WITH STD. WASHER AND SLEEVE NUT HAVING MIN. PULLOUT CAPACITY OF 30 KIPS. 8" MIN. EMBEDMENT. 4 PER POST REQUIRED.
5. CORRUGATED SHEET BEAM CONFORMING TO A.A.S.H.T.O. DESIGNATION M180, CLASS A, TYPE 2. "THRIE" BEAM MAY BE USED IN LIEU OF THE DOUBLE PLATE BEAM AS SHOWN. ATTACH TO NO. 1 WITH BOLTS NO. 7.
6. 1 3/4" X 3" MOUNTING BOLT WASHER, EIGHT GAGE, GALVANIZED.
7. 5/8" DIA. BUTTON HEAD RAIL MOUNTING BOLT WITH ROUND WASHER AND NUT. 2 PER POST REQ'D.
8. 5/8" DIA. X 2" LONG HEX BOLTS WITH NUT AND TWO WASHERS EACH. 4 REQ'D. PER POST CONNECTION, 8 REQ'D. PER SPLICE.
9. PLATE 1/2" X 5 3/4" X 6" WITH 1 1/4" DIA. HOLES FOR BOLTS NO. 8. WELD TO NO. 1 AS SHOWN.
10. PLATE 1/2" X 5 3/4" X 1'-2 1/2" WITH 1 1/4" DIA. HOLES FOR BOLTS NO. 8. WELD TO NO. 1 AS SHOWN.
11. PLATE 1/2" X 5 3/4" X 11 1/2" WITH 1 1/4" DIA. HOLES FOR BOLTS NO. 8. WELD TO NO. 1 AS SHOWN.

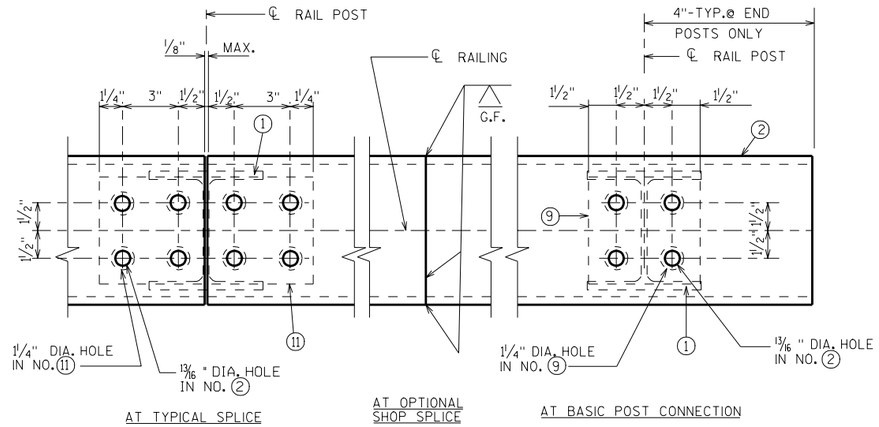


EXPANSION SPLICE

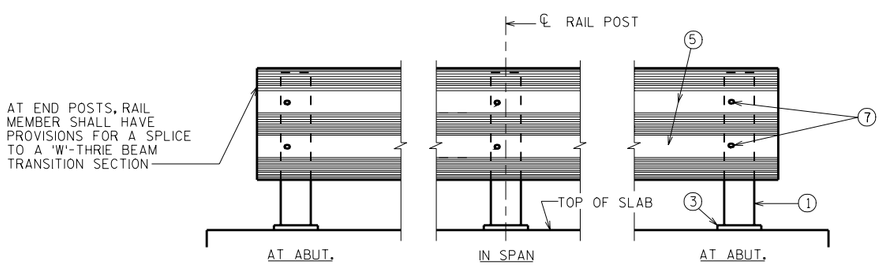


RAIL MEMBER SPLICE

5/8" DIA. BUTTON HEAD OVAL SHOULDER BOLTS WITH HEX NUTS AT ALL SLOTS.



CHANNEL MEMBER DETAILS



ELEVATION

GENERAL NOTES

BID ITEM SHALL BE "STEEL RAILING, TYPE W, MODIFIED" WHICH SHALL INCLUDE ALL ITEMS BETWEEN LONGIT. LIMITS OF NO. 5 SHOWN IN ELEVATION.

POST BASE PLATES, NO. 3 SHALL BE FLAT WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL. ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUT.

ALL MATERIAL, EXCEPT ANCHORAGE DETAIL (NO. 4) SHALL BE GALVANIZED AFTER FABRICATION.

FILL BOLT SLOT OPENINGS IN POST SHIMS AND PLATE NO. 3 WITH NON-STAINING GRAY NON-BITUMINOUS JOINT SEALER.

ALL MATERIALS USED IN FABRICATION SHALL BE MADE FROM MATERIALS CONFORMING TO A.S.T.M. DESIGNATION A709, GRADE 36 UNLESS NOTED OTHERWISE.

SHIM PLATES 6" X 1/16" X 1'-0 1/2" MAY BE USED BETWEEN TOP OF POST AND CHANNEL MEMBER TO ACHIEVE VERTICAL ALIGNMENT.

PRIOR TO GALVANIZING, ALL STEEL RAILING POSTS & CHANNELS SHALL BE GIVEN A NO. 6 COMMERCIAL BLAST CLEANING BY S.S.P.C. SPECIFICATIONS.

RAIL MEMBERS SHALL BE LAPPED IN THE DIRECTION OF TRAFFIC. AND THE UPPER RAIL SHALL LAP THE LOWER RAIL.

8

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DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

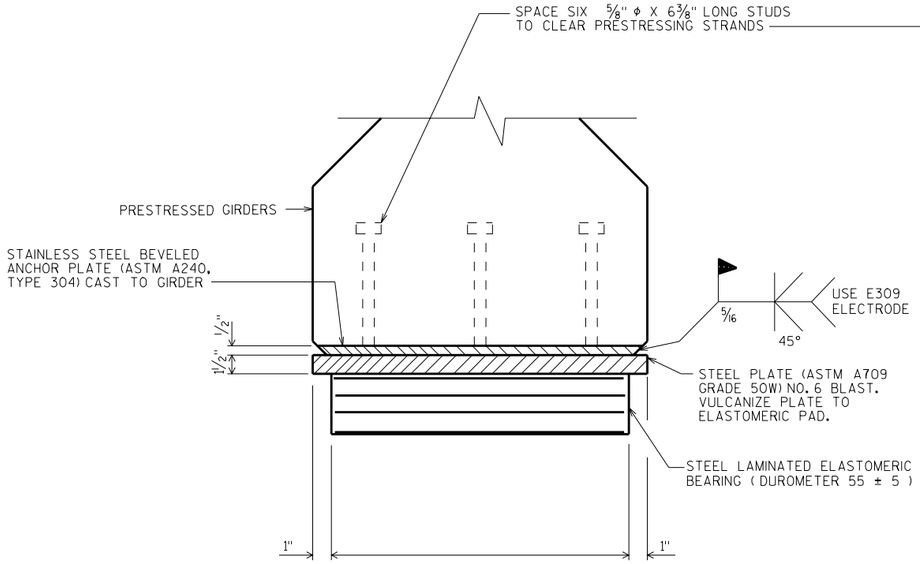
CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

MODIFIED W RAIL

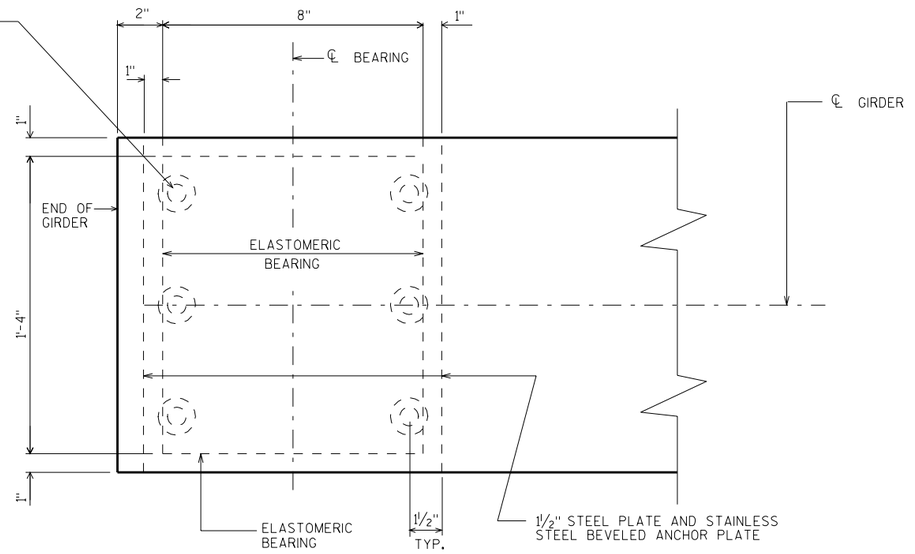
SHEET

FILE= RAILWOC.DGN
SCALE =

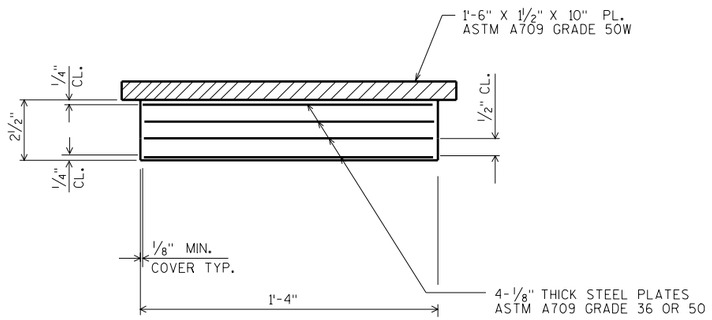
STATE PROJECT NUMBER
- -



END VIEW



PLAN VIEW



SECTION THRU ELASTOMERIC BEARING

BEARING NOTES

BEARINGS SHALL NOT BE PLACED AT A TEMPERATURE GREATER THAN 85° F.

ALL MATERIAL USED FOR BEARINGS SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "LAMINATED ELASTOMERIC BEARING PADS, EACH".

ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

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STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

PRESTRESSED GIRDER BEARINGS

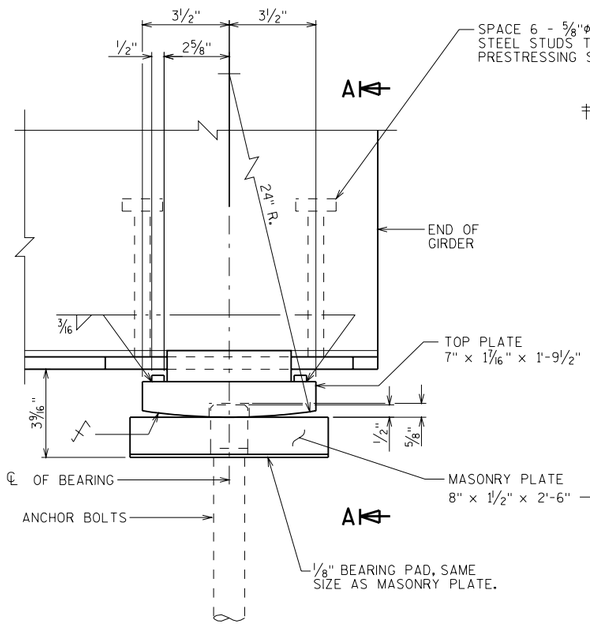
SHEET

FILE= BRELASPG.DGN
SCALE = :4

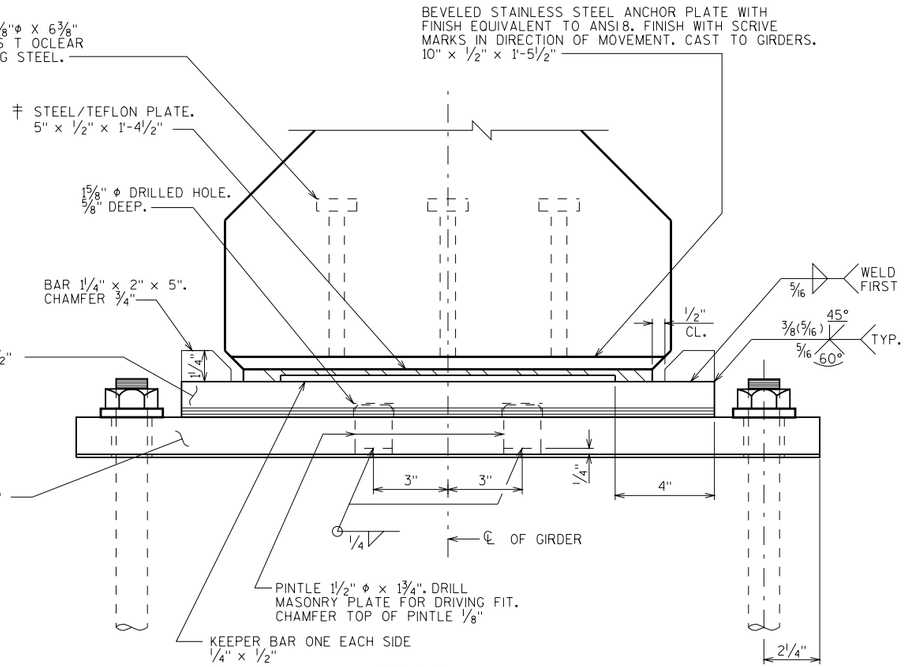
12-99

STATE PROJECT NUMBER

- -



EXPANSION BEARING



SECTION A-A

BEARING NOTES

ALL BEARINGS ARE SYMMETRICAL ABOUT ℄ OF GIRDER AND ℄ OF BEARING.

ALL MATERIAL INCLUDING SHIMS, BUT EXCLUDING STAINLESS STEEL PLATE, TEFLON SURFACE, PINTLES, ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A709 GRADE 50W.

STAINLESS STEEL PLATE SHALL CONFORM TO A.S.T.M. A240, TYPE 304.

STEEL PINTLES SHALL CONFORM TO ASTM A449 OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION.

FABRICATOR MAY INCREASE "MASONRY PLATE" THICKNESS AS AN ALTERNATE TO SHIMS.

ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED STEEL PLATES WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT, AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

ALL SURFACES MARKED √ SHALL BE MACHINE FINISHED ANSI 250 UNLESS OTHERWISE SHOWN.

ALL FINISHED SURFACES SHALL BE MACHINE FINISHED BY AN AUTOMATIC PROCESS.

ALL ANCHOR BOLTS, NUTS AND WASHERS SHALL CONFORM TO ASTM A709 GRADE 36, OR MATERIAL OF EQUIVALENT YIELD STRENGTH AND ELONGATION.

CHAMFER ANCHOR BOLTS PRIOR TO THREADING.

MASONRY PLATE, TOP PLATE, KEEPER BARS, ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AS REQUIRED BY ASTM DESIGNATION A153, CLASS "C". STEEL PLATE ATTACHED TO TEFLON SURFACE SHALL BE SHOP PAINTED.

ANCHOR BOLTS SHALL BE THREADED 3". PROVIDE ONE STANDARD WROUGHT WASHER AND ONE HEX NUT PER BOLT. PROJECT ANCHOR BOLTS "MASONRY PLATE" THICKNESS +2¼" ABOVE TOP OF CONCRETE.

ALL MATERIALS IN "STEEL BEARINGS FOR PRESTRESSED CONCRETE GIRDERS", INCLUDING SHIMS, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR EITHER "EXPANSION BEARING ASSEMBLIES, EACH" OR "FIXED BEARING ASSEMBLIES, EACH".

* DRILLED HOLES FOR ANCHOR BOLTS SHALL HAVE A DIAMETER ⅜" LARGER THAN ANCHOR BOLT.

‡ TEFLON SURFACE, USE UNFILLED MIN. 1/16" THICKNESS. PLACE WITH SCRIVE MARKS IN DIRECTION OF MOVEMENT. BOND STEEL AND TEFLON WITH ADHESIVE MATERIAL MEETING FED. SPEC. MMM-A-134, FEP FILM OR EQUAL.

8

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STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

PRESTRESSED GIRDER STEEL BEARINGS

SHEET

FILE= BRGPCG.DGN
SCALE =

123456

1/03

STATE PROJECT NUMBER

- -

✳ FINISH THESE SURFACES ANSI 250 FINISH IF 'Y' DIM. IS GREATER THAN 2".

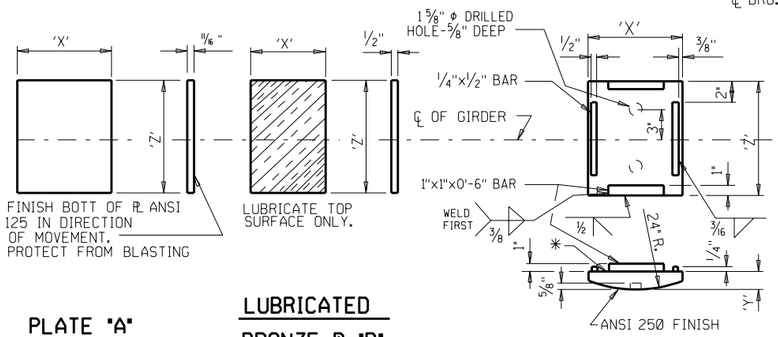
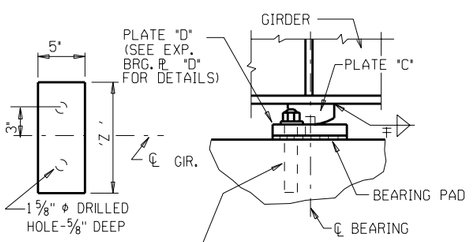


PLATE "A"

(STAINLESS STEEL)



LUBRICATED BRONZE ℄ "B"

FIXED BEARING ASSEMBLY

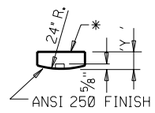
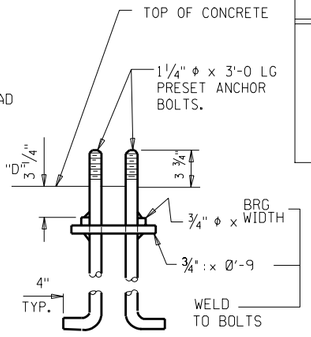


PLATE "C"

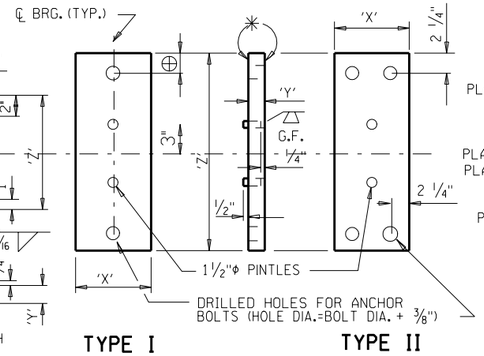
FIXED BEARING

PLATE "C"

EXPANSION BEARING



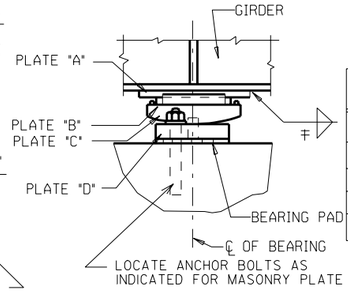
ANCHOR BOLT DETAIL



TYPE I

PLATE "D"

TYPE II



EXPANSION BEARING ASSEMBLY

∓ EXCEPT THAT WELD SIZE SHALL NOT EXCEED THICKNESS OF THINNER PART JOINED.

THICKNESS OF THICKER PART JOINED	∓MIN. SIZE OF FILLET WELD
TO 1/2" INCLUSIVE	3/16"
OVER 1/2" TO 3/4"	1/4"
OVER 3/4" TO 1 1/2	5/16"
OVER 1 1/2" TO 2 1/4"	3/8"
OVER 2 1/4" TO 6"	1/2"

TABLE OF FILLET WELD SIZES

⊕ 2" WHEN 1 1/4" ϕ ANCHOR BOLTS ARE USED AND 2 1/4" WHEN 1 1/2" ϕ ANCHOR BOLTS ARE USED.

	PLATE "A"		PLATE "B"		PLATE "C"			PLATE "D"			PLATE "D" TYPE	ANCHOR BOLT SIZE	NO. OF BRG'S REQ'D.	LOCATION
	X	Z	X	Z	X	Y	Z	X	Y	Z				
EXPANSION BEARING														
FIXED BEARING														

BEARING NOTES

ALL BEARINGS ARE SYMMETRICAL ABOUT ℄ OF GIRDER AND ℄ OF BEARING.

ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED STEEL PLATES WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

ALL FINISHED SURFACES SHALL BE MACHINE FINISHED BY AN AUTOMATIC PROCESS.

LOCATE ANCHOR BOLTS AS INDICATED FOR PLATE"D" SEE TABLE FOR SIZE. BOLT LENGTH TO BE 1'-5 FOR 1 1/4" ϕ AND 1'-10 FOR 1 1/2" ϕ BOLTS. PROJECT ANCHOR BOLTS "D" PLATE THICKNESS +2 1/4" ABOVE TOP OF CONCRETE.

ANCHOR BOLTS SHALL BE THREADED 3". PROVIDE ONE STANDARD WROUGHT WASHER AND ONE HEXNUT PER BOLT.

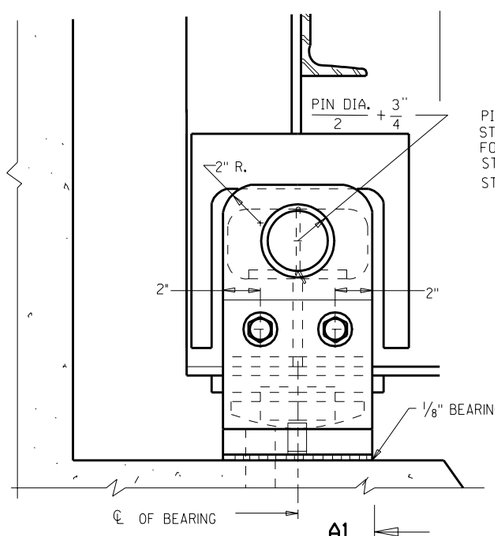
FOR UNPAINTED STRUCTURES THE UPPER 6 INCHES OF THE ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AS REQUIRED BY ASTM DESIGNATION A153, CLASS C OR A164, TYPE GS.

CHAMFER TOP OF PINTLES 1/8". DRILL HOLES FOR PINTLES IN ALL "D" PLATES FOR DRIVING FIT.

ALL MATERIAL INCLUDING SHIMS BUT EXCLUDING ANCHOR BOLTS, PLATE "A", PINTLES, NUTS AND WASHERS SHALL BE MADE OF A588 STEEL. PINTLES SHALL BE MADE OF A449 STEEL.

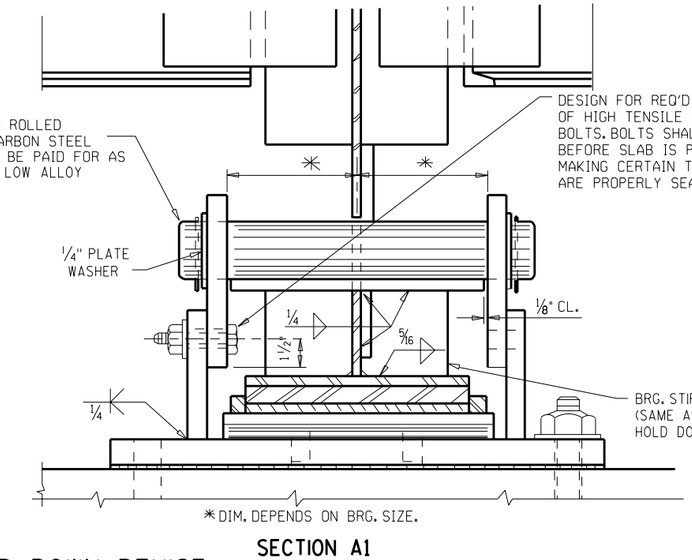
ALL MATERIAL IN BEARINGS, EXCLUDING BRONZE PLATES AND BEARING PADS SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "HIGH STRENGTH STRUCTURAL STEEL"

PROVIDE 1/8" THICK BEARING PAD SAME SIZE AS PLATE "D" FOR EACH BEARING.



ELEVATION

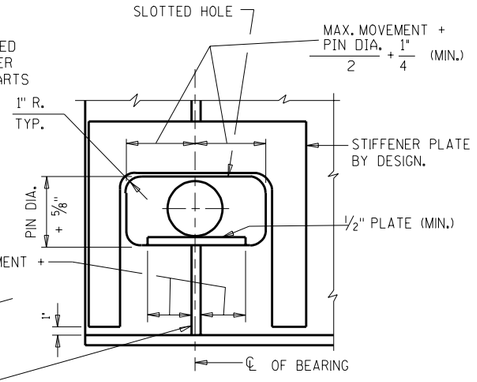
A1



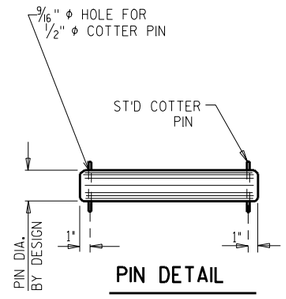
✳ DIM. DEPENDS ON BRG. SIZE.

SECTION A1

PERMANENT HOLD DOWN DEVICE



GIRDER DETAIL



PIN DETAIL

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

BEARING DETAILS

SHEET 8

FILE= BRHOLDWN.DGN
SCALE = :1

3/87

9-1-94

STATE PROJECT NUMBER

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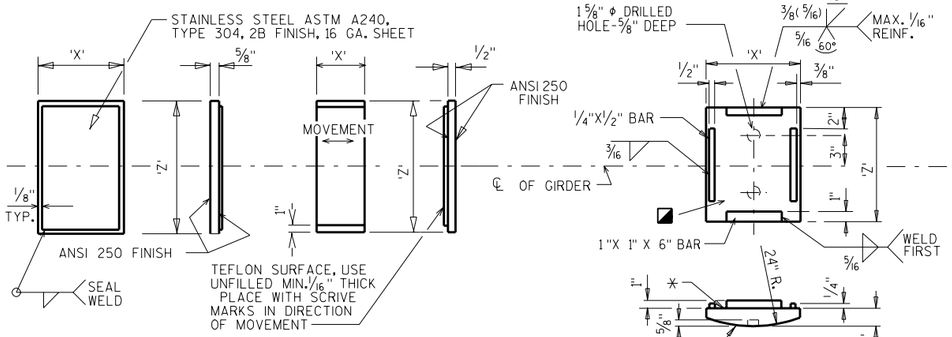


PLATE "A"

PLATE "B"

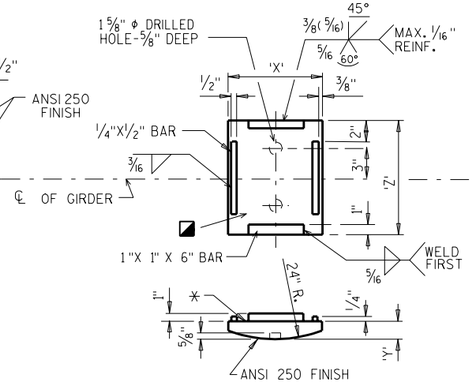
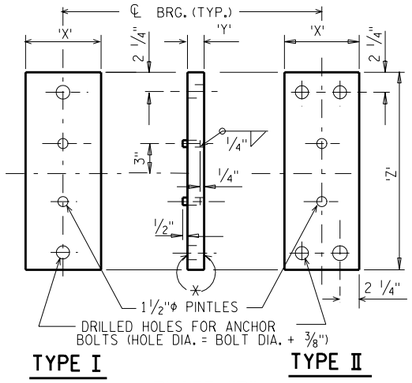


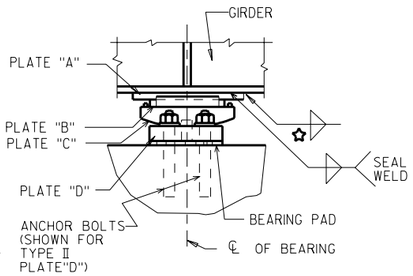
PLATE "C"



TYPE I

PLATE "D"

TYPE II



EXPANSION BEARING ASSEMBLY

EXPANSION BEARING

	PLATE "A"		PLATE "B"		PLATE "C"			PLATE "D"			PLATE "D" TYPE	ANCHOR BOLT SIZE	NO. OF BRG'S REQ'D.	LOCATION
	'X'	'Z'	'X'	'Z'	'X'	'Y'	'Z'	'X'	'Y'	'Z'				
EXPANSION BEARING						B					I	1 1/4"ϕ		
											II	1 1/2"ϕ		
FIXED BEARING						B								

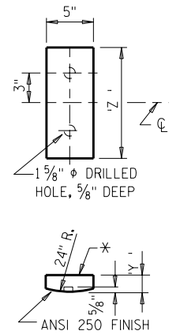
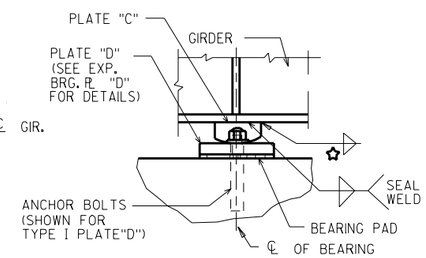


PLATE "C"



FIXED BEARING ASSEMBLY

FIXED BEARING

BEARING NOTES

ALL BEARINGS ARE SYMMETRICAL ABOUT ℄ OF GIRDER AND ℄ OF BEARING.

ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED STEEL PLATES WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

ALL FINISHED SURFACES SHALL BE MACHINE FINISHED BY AN AUTOMATIC PROCESS.

CHAMFER ANCHOR BOLTS PRIOR TO THREADING. ANCHOR BOLTS SHALL BE THREADED 3". PROVIDE ONE STANDARD WROUGHT WASHER AND ONE HEX NUT PER BOLT. BOLT LENGTH TO BE 1'-5 FOR 1 1/4" ϕ AND 1'-10 FOR 1 1/2" ϕ BOLTS. PROJECT ANCHOR BOLTS "D"PLATE THICKNESS +2 1/4" ABOVE TOP OF CONCRETE.

CHAMFER TOP OF PINTLES 1/8". DRILL HOLES FOR PINTLES IN ALL "D" PLATES FOR DRIVING FIT.

ALL MATERIAL INCLUDING SHIMS BUT EXCLUDING ANCHOR BOLTS, STAINLESS STEEL, TEFLON SURFACE , PINTLES, NUTS AND WASHERS SHALL BE MADE OF ASTM A709 GRADE 50W. STEEL PINTLES SHALL BE MADE OF ASTM A449 STEEL OR MATERIAL OF EQUAL YIELD STRENGTH & ELONGATION.

ANCHOR BOLTS, NUTS & WASHERS SHALL CONFORM TO ASTM A709 GRADE 36 OR MATERIAL OF EQUIV. STRENGTH & ELONGATION.

PROVIDE 1/8" THICK BEARING PAD SAME SIZE AS PLATE "D" FOR EACH BEARING.

ALL MATERIAL IN BEARINGS, INCLUDING BEARING PADS & SHIM PLATES SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "EXPANSION BEARING ASSEMBLIES" OR "FIXED BEARING ASSEMBLIES", RESPECTIVELY.

ANCHOR BOLTS, NUTS & WASHERS SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C.

ALL SURFACES OF BEARING PLATES, EXCEPT STAINLESS STEEL & TEFLON SURFACES, SHALL BE PAINTED AFTER GALVANIZING WITH A TIE COAT, INTERMEDIATE COAT & TOP COAT. FOR UNPAINTED STRUCTURES, BEARING PLATES WELDED TO THE GIRDER NEED NOT BE PAINTED.

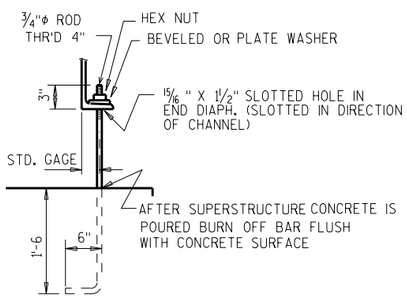
✳ FINISH THESE SURFACES ANSI 250 FINISH IF 'Y' DIM. IS GREATER THAN 2".

◪ PROVIDE A METHOD FOR HANDLING PLATE "C" DURING GALVANIZING.

✿ TABLE OF FILLET WELD SIZES

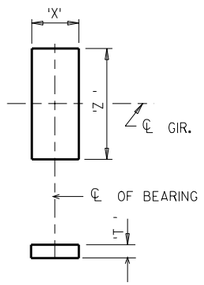
THICKNESS OF THICKER PART JOINED	∓ MIN. SIZE OF FILLET WELD
TO 1/2" INCLUSIVE	3/16"
OVER 1/2" TO 3/4"	1/4"
OVER 3/4" TO 1 1/2"	5/16"
OVER 1 1/2" TO 2 1/4"	3/8"
OVER 2 1/4" TO 6"	1/2"

∓ EXCEPT THAT WELD SIZE SHALL NOT EXCEED THICKNESS OF THINNER PART JOINED.



TEMPORARY HOLD DOWN

PLACE ONE PER GIRDER AT ABUTMENT WHERE SLAB POUR TERMINATES. LOCATE 1'-6 (NORMAL) OFF ℄ OF GIRDER. TO BE PAID FOR AS "STRUCTURAL CARBON STEEL".



PLACE SHIM PLATE BETWEEN BEARING PAD & PLATE "D".

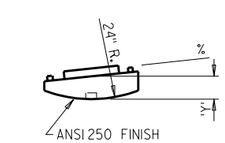
'T'	NO. REQ'D.	LOCATION

FOR DIMS. 'X', 'Z' & ANCHOR BOLT LOCATIONS SEE PLATE "D".

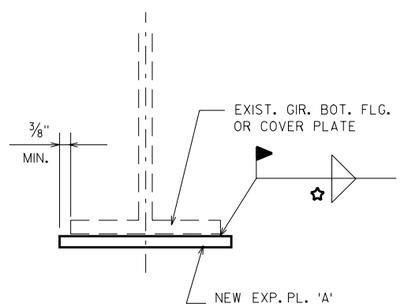
SHIM PLATE DETAILS

IN LIEU OF SHIM PLATE, THICKNESS OF PLATE "A" OR "D". MAY BE INCREASED BY "T" THE SHIM PLATE THICKNESS.

SHIM PLATE NOT REQUIRED IF FLANGE BUTT SPLICE IS ELIMINATED & THE LARGER FLANGE PLATE IS EXTENDED TO THE END OF THE GIRDER.



BEVELED PLATE "C"



BEARING REPLACEMENT DETAILS

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

BEARING DETAILS

SHEET 8

FT 55 9-1-94

TEMP HOLD DOWN = LV 3

FILE= BRTFLON.DGN

SCALE =

LEVELS 123456

STATE PROJECT NUMBER

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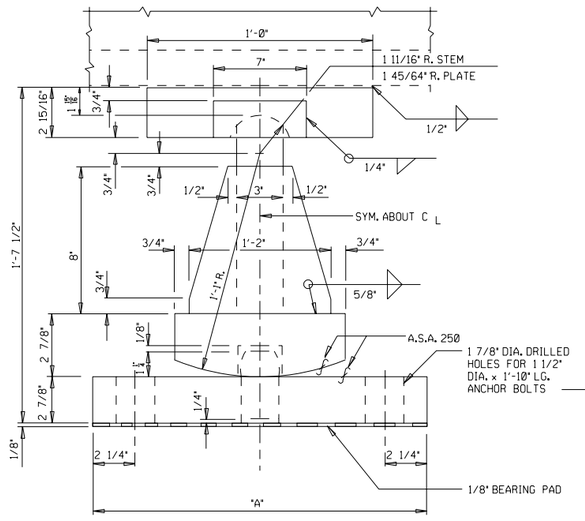
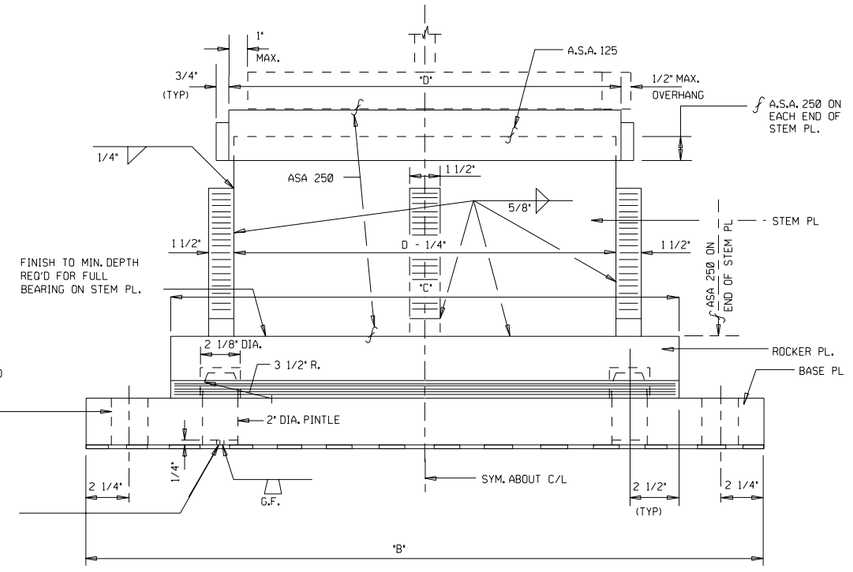


END VIEW



FRONT VIEW

ROCKER BEARING - EXPANSION

TEMP. AT TIME OF SETTING (F°)	(-) (+) VERT.	
	PIERS	PIERS
120°		
100°		
80°		
60°		
40°		
20°		
0°		
-20°		

GENERAL NOTES

ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED STEEL PLATES WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OF MACHINE FLAME CUTS.

PAY QUANTITIES FOR SIDE PLATES ON BEARINGS WILL BE BASED ON ACTUAL SIZE.

PINTLES SHALL BE MACHINED TO A DRIVING FIT.

ANCHOR BOLTS SHALL BE THREADED 3". PROVIDE ONE 1/4" WASHER AND ONE HEAVY HEX. NUT PER ANCHOR BOLT.

ALL MATERIAL FOR BEARINGS AT PIERS, EXCEPT NUTS, BOLTS AND WASHERS, SHALL CONFORM TO ASTM SPECIFICATION TYPE A709 GRADE 50W

ALL NUTS AND BOLTS SHALL CONFORM TO ASTM SPECIFICATION TYPE A709, GRADE 36.

PINTLES SHALL BE MADE OF ASTM A449 STEEL.

ALL SURFACES MARKED ∫ SHALL BE MACHINE FINISHED BY AUTOMATIC PROCESS.

RADIAL SURFACES ON ROCKER SHALL BE MACHINE FINISHED AFTER WELDING.

AFTER WELDING FIXED SHOE ASSEMBLY, FINISH BOTTOM OF BASE PLATE TO A FLAT SURFACE.

ALL MATERIAL IN BEARING, EXCLUDING BEARING PADS, SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "HIGH STRENGTH STRUCTURAL STEEL".

PROVIDE A 1/8" THICK BEARING PAD SAME SIZE AS THE BASE PLATE FOR EACH BEARING.

ANCHOR BOLTS TO PROJECT THICKNESS OF BASE PLATE +2 1/4" ABOVE TOP OF CONCRETE.

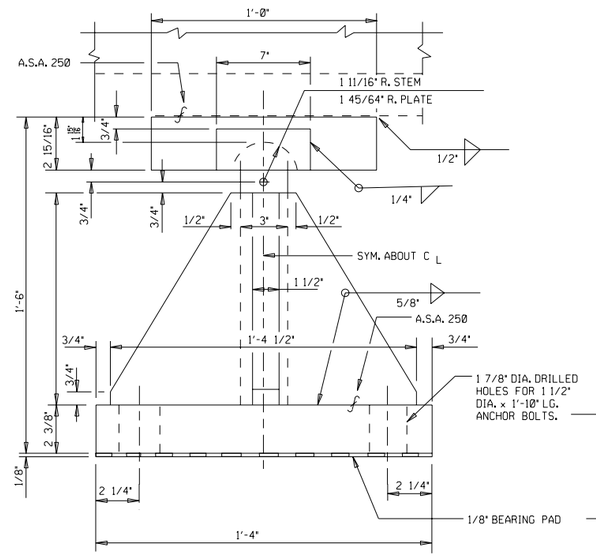
FOR UNPAINTED STRUCTURES THE UPPER 6 INCHES OF THE ANCHOR BOLTS, NUTS AND WASHERS SHALL BE GALVANIZED AS REQ'D BY ASTM DESIGNATION A153, CLASS C OR A164, TYPE 05.

EXPANSION

LOCATION	GIRDER NO.	A	B	C	D	NO. REQ'D.

FIXED

LOCATION	GIRDER NO.	E	NO. REQ'D.



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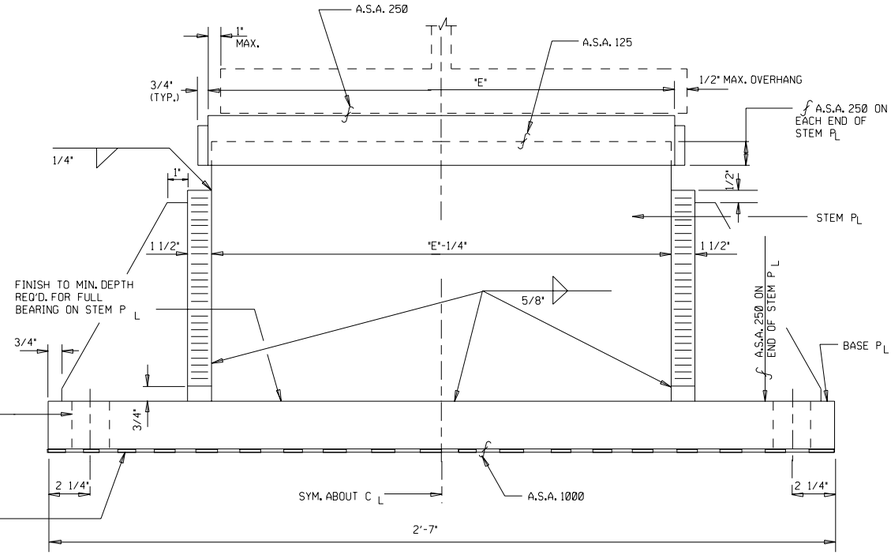

FRONT VIEW

SHOE BEARING - FIXED

NO.	DATE	REVISION	BY

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STRUCTURE

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BEARING DETAILS

SHEET 8

FILE= BRTYPEB.DGN
SCALE = :1

9-1-94

STATE PROJECT NUMBER

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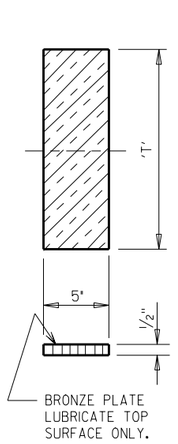
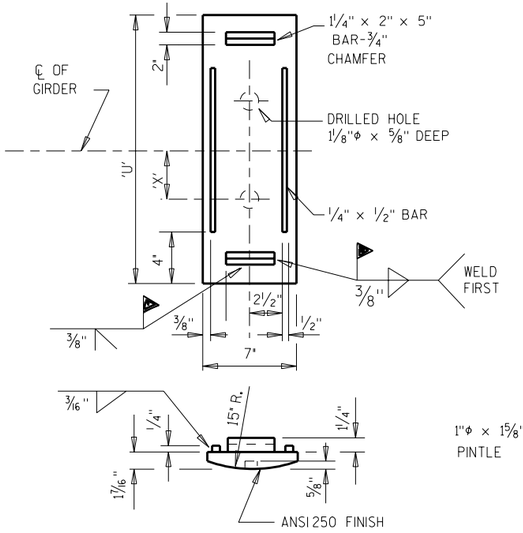


PLATE A



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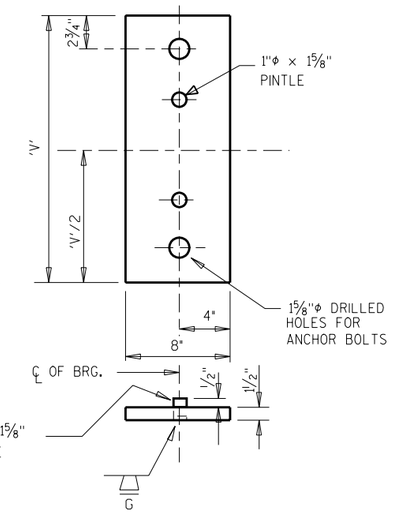


PLATE C

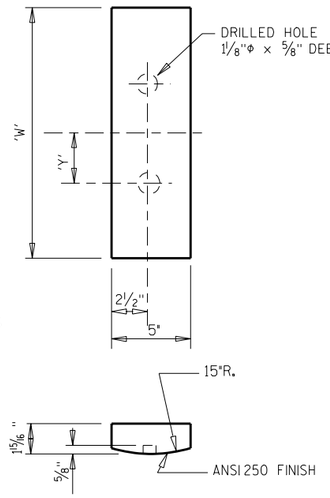


PLATE D

BEARING NOTES

ALL MATERIAL EXCLUDING ANCHOR BOLTS AND PINTLES SHALL BE MADE OF A588 STEEL.

ALL STRUCTURAL STEEL BEARING PLATES SHALL BE FLAT ROLLED STEEL PLATES WITH ALL SURFACES SMOOTH AND FREE FROM WARP AND ALL EDGES SMOOTH, STRAIGHT AND VERTICAL.

ALL PLATE CUTS SHALL BE MACHINE OR MACHINE FLAME CUTS.

MACHINE FINISH THE BOTTOM SURFACE ONLY OF PLATES SHOWN TO BE FINISHED.

ALL MATERIAL EXCLUDING BRONZE PLATES, BEARING PADS AND ANCHOR PLATES SHALL BE PAID FOR AT THE UNIT PRICE BID FOR "HIGH STRENGTH STRUCTURAL STEEL"

ALL ANCHOR BOLTS TO BE 1¼" x 1'-3" LONG, SET FLUSH AND CAULKED WITH LEAD TO THE TOP OF PLATE 'C'. EXCESS LENGTH MAY BE FURNISHED, THREADED FOR SETTING AND THEN CUT OFF FLUSH.

CHAMFER TOP OF PINTLES ⅛". DRILL HOLES FOR PINTLES IN PLATE "C" FOR DRIVING FIT.

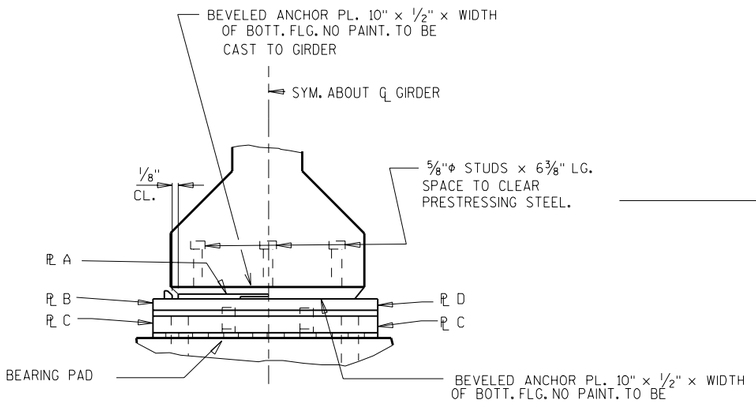
PROVIDE ⅛" THICK BEARING PAD SAME SIZE AS PLATE 'C' FOR EACH BEARING.

ALL BEARINGS ARE SYMMETRICAL ABOUT ℄ GIRDER AND ℄ OF BEARING.

PINTLES SHALL CONFORM TO A.S.T.M. SPECIFICATION TYPE A449 STEEL, OR MATERIAL OF EQUIVALENT YEILD STRENGTH & ELONGATION.

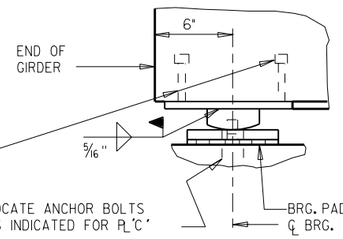
ALL ANCHOR BOLTS SHALL CONFORM TO A.S.T.M. SPECIFICATION TYPE A36 STEEL.

	GIRDER SIZE	DIM 'T'	DIM 'U'	DIM 'V'	DIM 'W'	DIM 'X'	DIM 'Y'	NO. OF BRG. REQ'D	LOCATION
EXP. BRG.	36"	1'-4½"	1'-9½"	1'-9½"		4"			
	45"	1'-8½"	2'-1½"	2'-1½"		7"			
	54"	2'-0½"	2'-5½"	2'-5½"		9"			
	54W"	2'-4½"	2'-9½"	2'-9½"					
	70"	2'-0½"	2'-5½"	2'-5½"		9"			
FIXED BRG.	36"			1'-8"	1'-8"		4"		
	45"			2'-0"	2'-0"		6¼"		
	54"			2'-4"	2'-4"		8"		
	54W"			2'-8"	2'-8"				
	70"			2'-4"	2'-4"		8"		

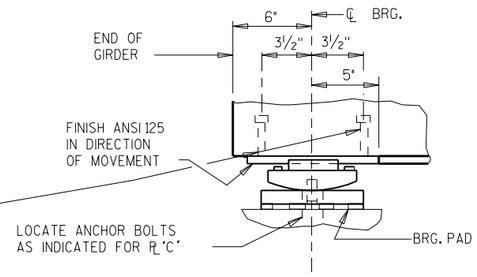


EXP. BRG. FIXED BRG.

BEARING DETAILS



FIXED BEARING ASSEMBLY



EXPANSION BEARING ASSEMBLY

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

PRESTRESSED GIRDER BEARINGS

SHEET

8

FILE= BRWPGB.DGN
SCALE = :1

STATE PROJECT NUMBER
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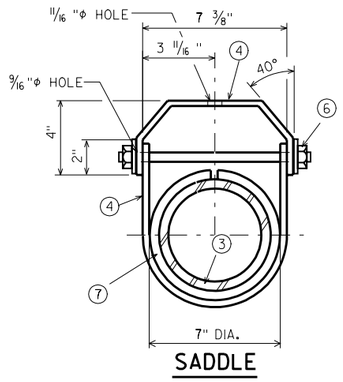


SADDLE

LEGEND

1. FLEXIBLE RUBBER HOSE, MIN. 3/16" THICK WALL. I.D. TO SUIT DOWNSPOUT.
2. 10 GAGE ST. STL. CLAMP GRADE 304.
3. NEW 6"Φ DOWNSPOUT PIPEING SHALL BE REINFORCED THERMOSETTING RESIN PIPING (RTRP) CONFORMING TO ASTM D2996 & 2310.
4. 10 GAGE GALV. STEEL SADDLE.
5. 5/8"Φ ST. STL. THREADED ROD (GRADE 304) WITH ST. STL. HEX NUTS & WASHERS OR GALV. ROD.
6. 1/2"Φ X 8"LG. ST. STL. THREADED ROD (GRADE 304) WITH ST. STL. HEX NUTS & WASHERS.
7. 6" LG. SPLIT RTRP STRIP. BOND TO #3, PLACE AT ALL CLAMP LOC'S.
8. BENT ANCHOR PL. - 7 GAGE ST. STL. GRADE 304.
9. 1/2"Φ ADHESIVE ANCHOR BOLTS. (ST. STL. BOLT & WASHER - TYP.)
10. BREEZE "HI-TORQUE CLAMP #HTM-700 304 HALF HARD ST. STL. OR EQUIV. (4 REQ'D. PER EACH #1).
11. 7 GAGE ST. STL. GUSSET PL. WELD TO #2 & 8.
12. 3/8" X 1" LG. ST. STL. HEX HEAD BOLT WITH NUT LOCK WASHER.

DOWNSPOUT NOTES

CLEVIS, PIPE CLAMPS, HANGERS & MISS. ITEMS ARE INCLUDED IN BID ITEM "RTRP DOWNSPOUTS, 6".

TIGHTEN CLAMPS TO A TIGHT SLIP FIT (FOR TEMP. EXPANSION).

ALL ELBOWS TO BE LONG RADIUS TYPE.

CONTRACTOR TO FIELD VERFIY ALL DEMINSIONS.

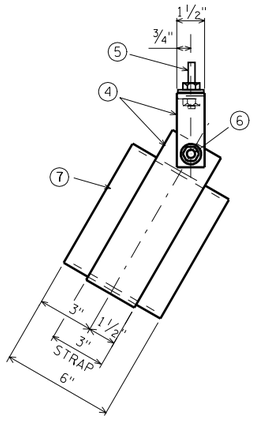
A CLAMP OF EQUAL STRENGTH MAY BE USED AS AN ALTERNATE.

RTRP DOWNSPOUT TO BE SUPPORTED AT 8'-0" MAX. SPACING USING ONE OF THE SHOWN BRACKETS. REPLACE DOWNSPOUT SYSTEM FROM EXIST. REDUCER TO TO NEW FLOOR DRAIN.

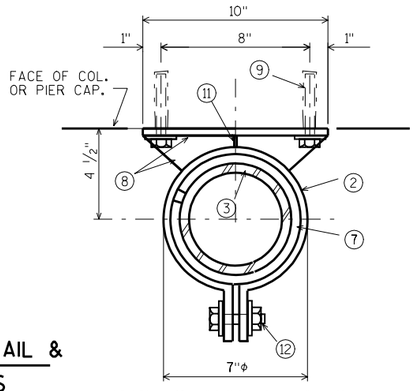
REMOVE EXISTING REDUCER & USE NEW FLEXIBLE CONNECTION TO CONNECT NEW DOWNSPOUT TO EXISTING DOWNSPOUT. ALL NEW SYSTEM AT PIER 9.

INSTALL CLEAN-OUTS AT ELBOWS AS NEEDED.

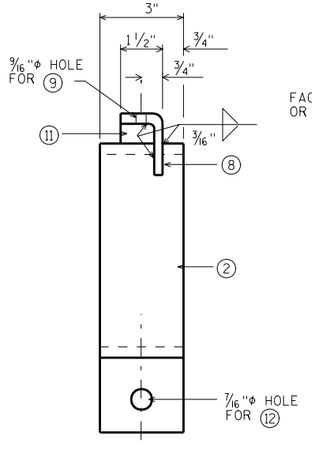
DRAIN WORK TO BE COMPLETED AS DIRECTED BY THE ENGINEER.

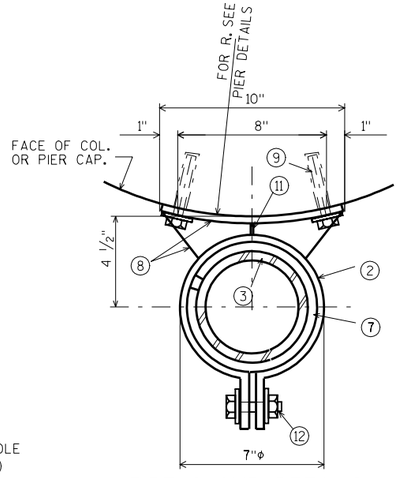


ADJUSTABLE CLEVIS DETAIL &
PIPE HANGER DETAILS

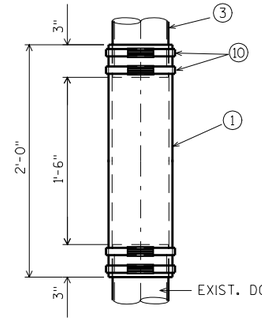


PIPE CLAMP DETAILS





PIPE CLAMP DETAILS



FLEXIBLE CONNECTION

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

DOWNSPOUT DETAILS

SHEET

8

FILE= DOWNSP.DGN
SCALE = : .333

9-1-94

STATE PROJECT NUMBER

- -

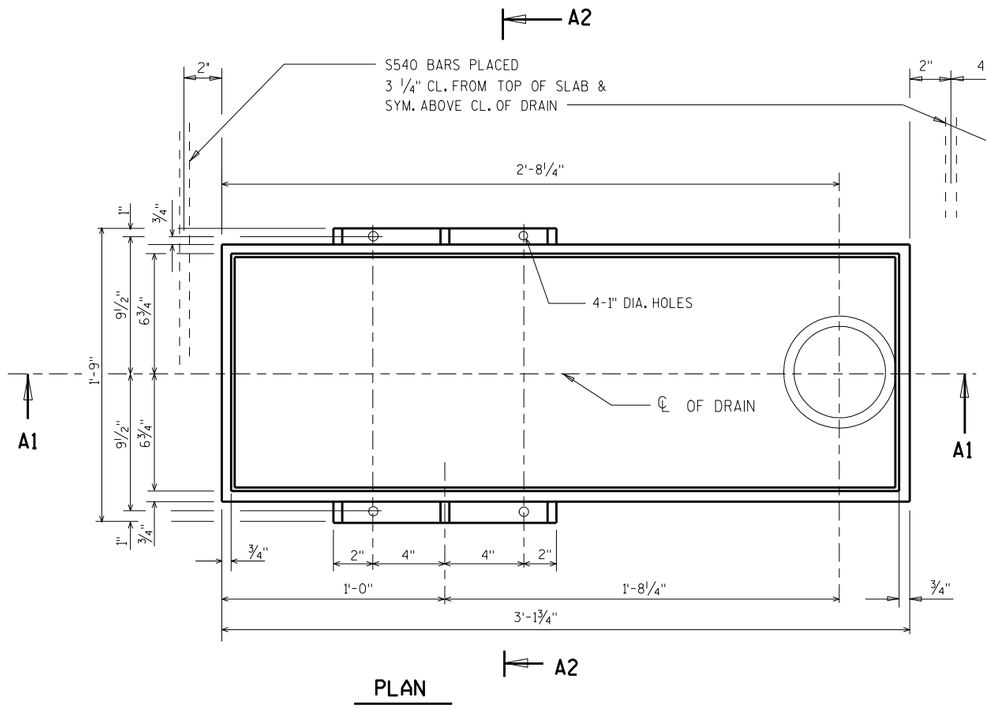
GENERAL NOTES

ALL MATERIAL FOR TYPE "R-4014-C" CASTING, EXCLUDING GRATE HOLD DOWN SCREWS, SHALL BE GRAY IRON CONFORMING TO A.S.T.M. A48, CLASS 35B OR BETTER. (APPROX. WEIGHT = 380#) NO PAINT.

MATERIAL FOR BRACKETS SHALL CONFORM TO A.S.T.M. A36.

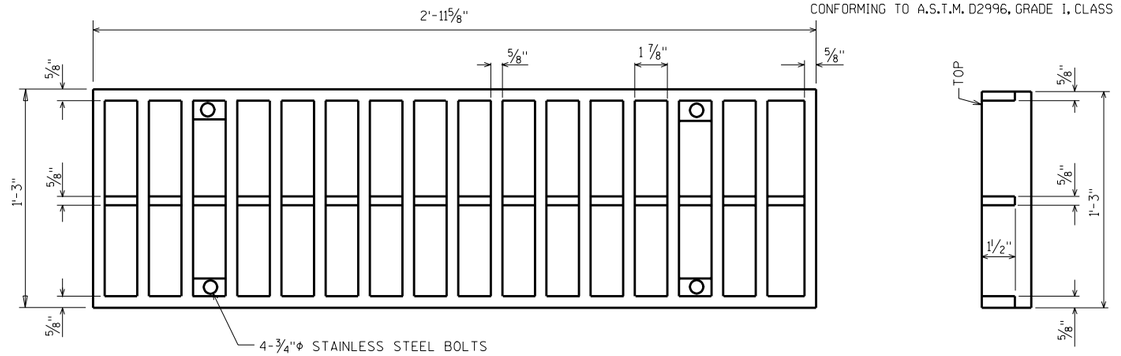
THE CONTRACTOR MAY PROPOSE AN ALTERNATE TYPE OF BRACKET. THE PROPOSED ALTERNATE DETAILS SHALL BE SUBMITTED AND SUBJECT TO THE APPROVAL OF THE ENGINEER.

FLANGED 6" DIA. DOWNSPOUTS SHALL BE EITHER CAST MATERIAL OR FIBERGLASS CONFORMING TO A.S.T.M. D2996, GRADE I, CLASS A.

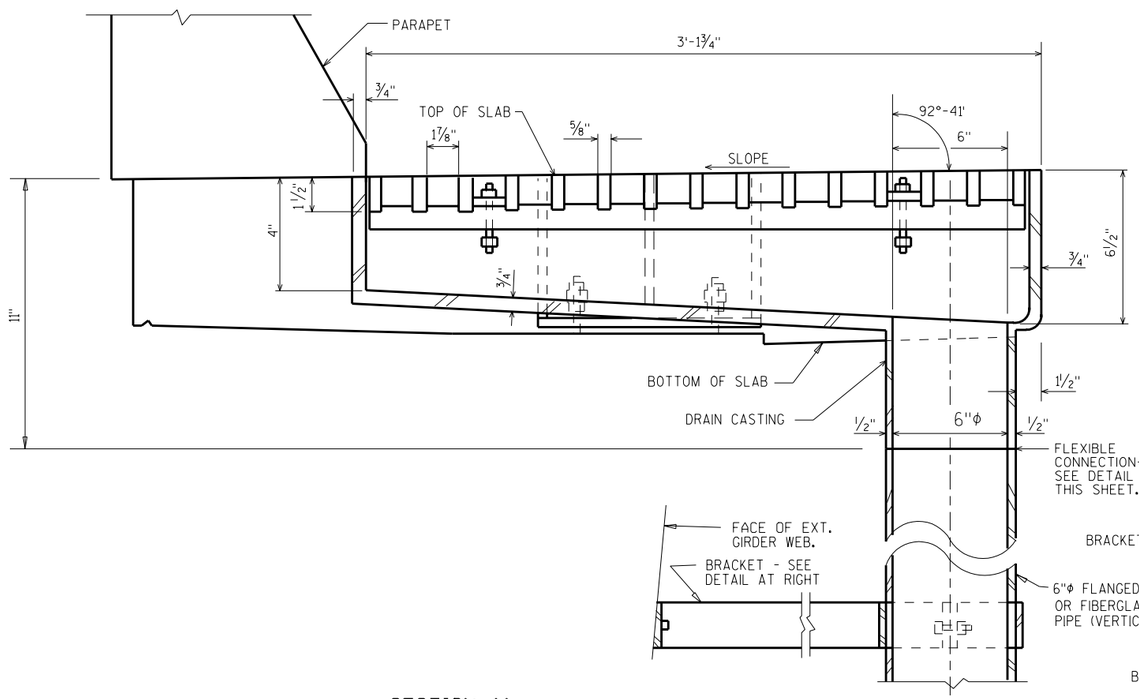


PLAN

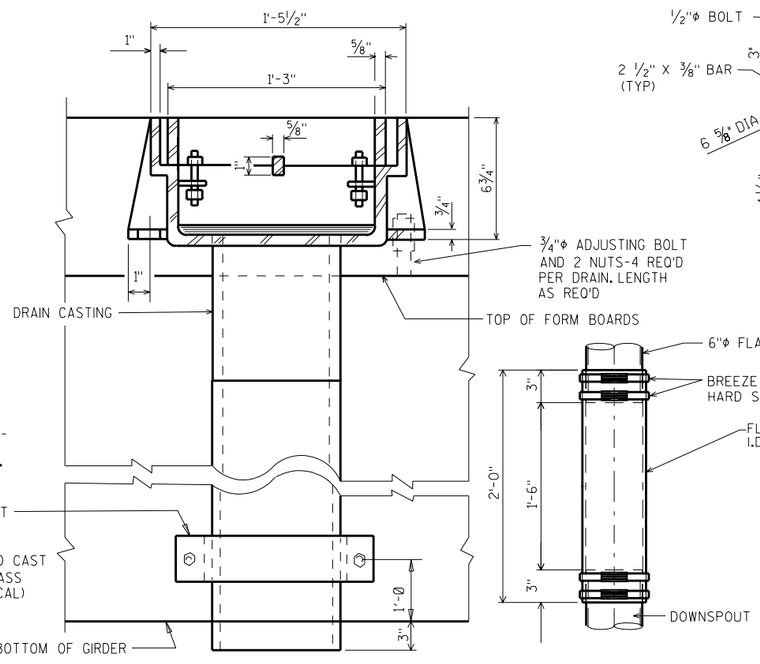
TRANS. AND LONGIT. SLAB BAR REINF. TO BE CUT A MAX. 1" CL. FROM DRAIN DISPLACE BARS WHERE POSSIBLE



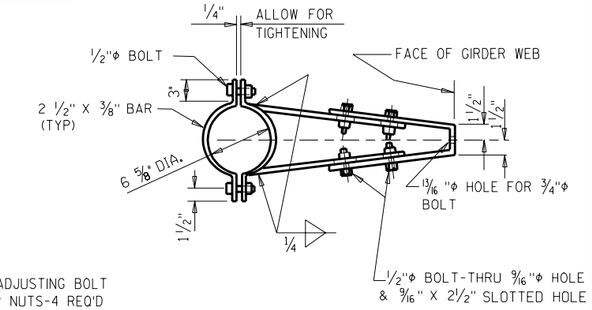
GRATE CASTING DETAIL



SECTION A1



SECTION A2



BRACKET DETAIL

FLEXIBLE CONNECTION

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

FLOOR DRAIN
TYPE 'R-4014-C1'

SHEET

8

FILE= DR4014C-IN.DGN
SCALE = :1

3-12-99

STATE PROJECT NUMBER

- -

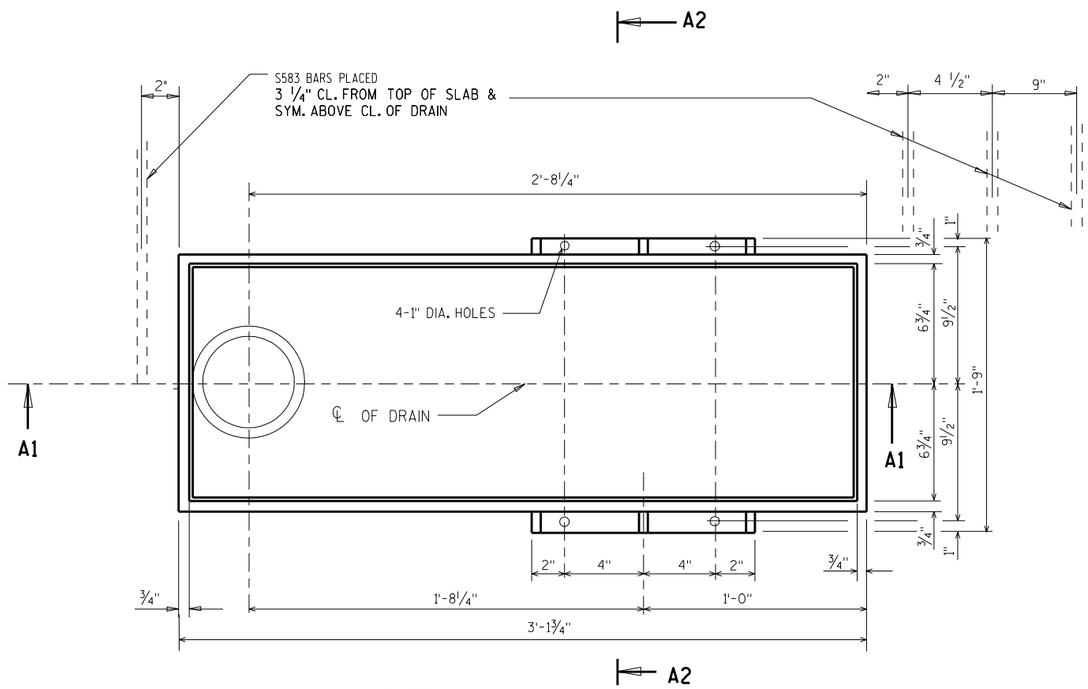
GENERAL NOTES

ALL MATERIAL FOR TYPE "R-4014-C" CASTING, EXCLUDING GRATE HOLD DOWN SCREWS, SHALL BE GRAY IRON CONFORMING TO A.S.T.M. A48, CLASS 35B OR BETTER. (APPROX. WEIGHT = 380#) NO PAINT.

MATERIAL FOR BRACKETS SHALL CONFORM TO A.S.T.M. A36.

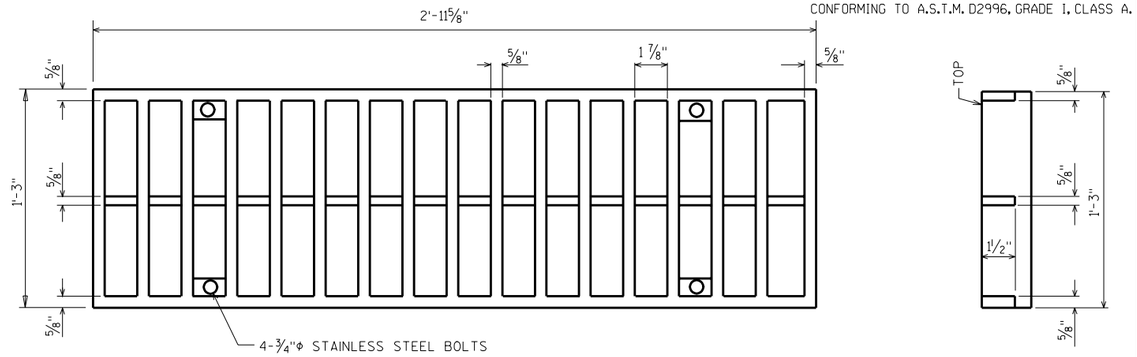
THE CONTRACTOR MAY PROPOSE AN ALTERNATE TYPE OF BRACKET. THE PROPOSED ALTERNATE DETAILS SHALL BE SUBMITTED AND SUBJECT TO THE APPROVAL OF THE ENGINEER.

FLANGED 6" DIA. DOWNSPOUTS SHALL BE EITHER CAST MATERIAL OR FIBERGLASS CONFORMING TO A.S.T.M. D2996, GRADE I, CLASS A.

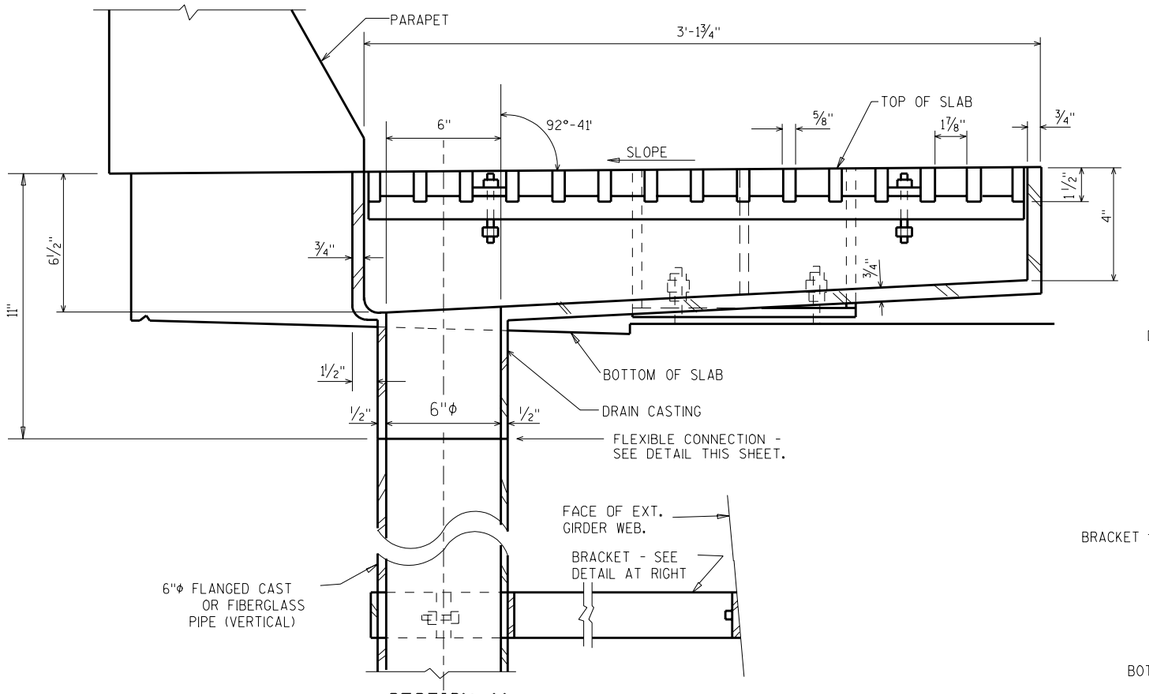


PLAN

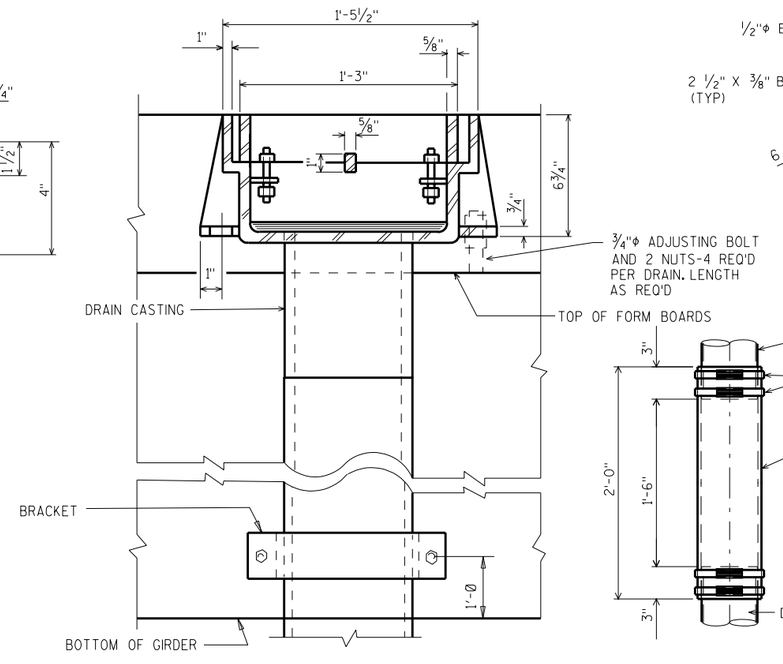
TRANS. AND LONGIT. SLAB BAR REINF. TO BE CUT A MAX. 1" CL. FROM DRAIN DISPLACE BARS WHERE POSSIBLE



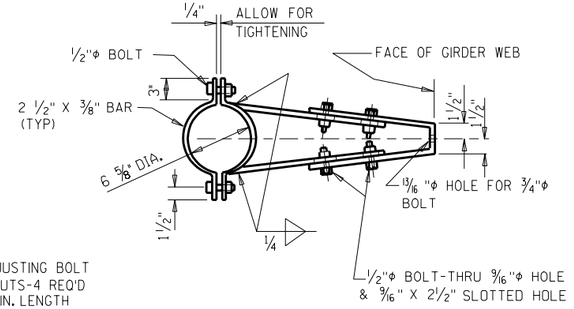
GRATE CASTING DETAIL



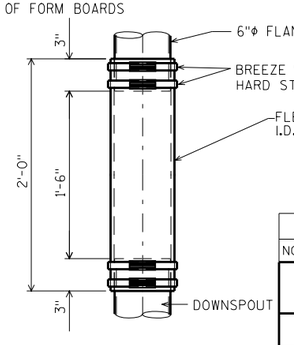
SECTION A1



SECTION A2



BRACKET DETAIL



FLEXIBLE CONNECTION

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

FLOOR DRAIN
TYPE 'R-4014-C1'

SHEET

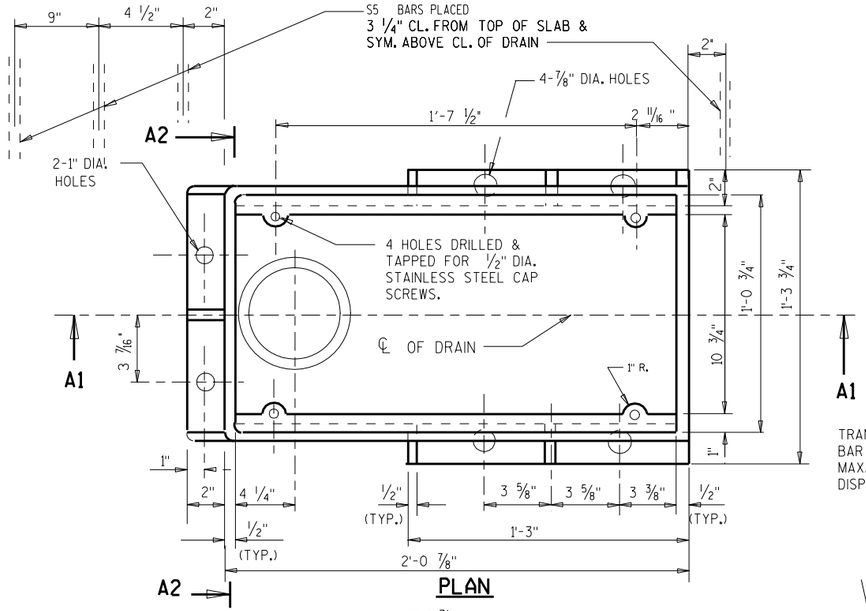
8

FILE= DR4014C-OUT.DGN
SCALE = :1

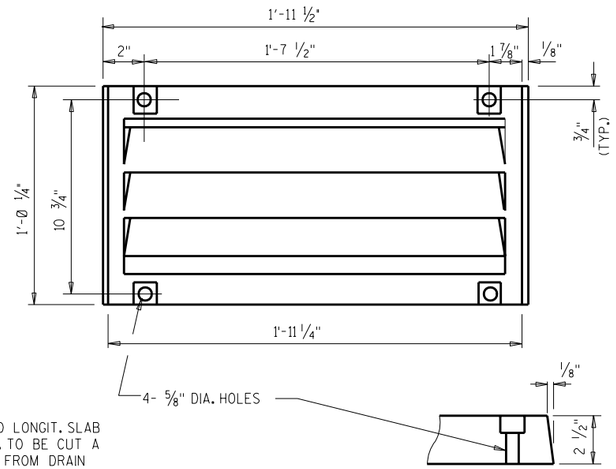
3-12-99

STATE PROJECT NUMBER

- -



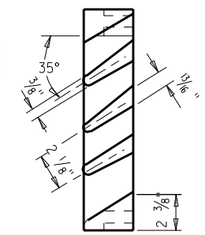
PLAN



TRANS. AND LONGIT. SLAB BAR REINF. TO BE CUT A MAX. 1" CL. FROM DRAIN DISPLACE BARS WHERE POSSIBLE

GRATE CASTING DETAIL

ATTACH GRATE TO FRAME FOR SHIPMENT



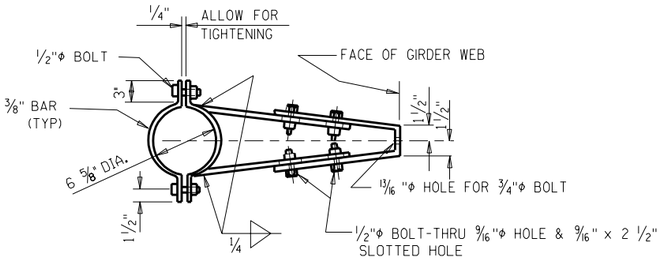
GENERAL NOTES

ALL MATERIAL FOR TYPE "GC" CASTING, EXCLUDING GRATE HOLD DOWN SCREWS, SHALL BE GRAY IRON CONFORMING TO A.S.T.M. A48, CLASS 30. (APPROX. WEIGHT = 225#)

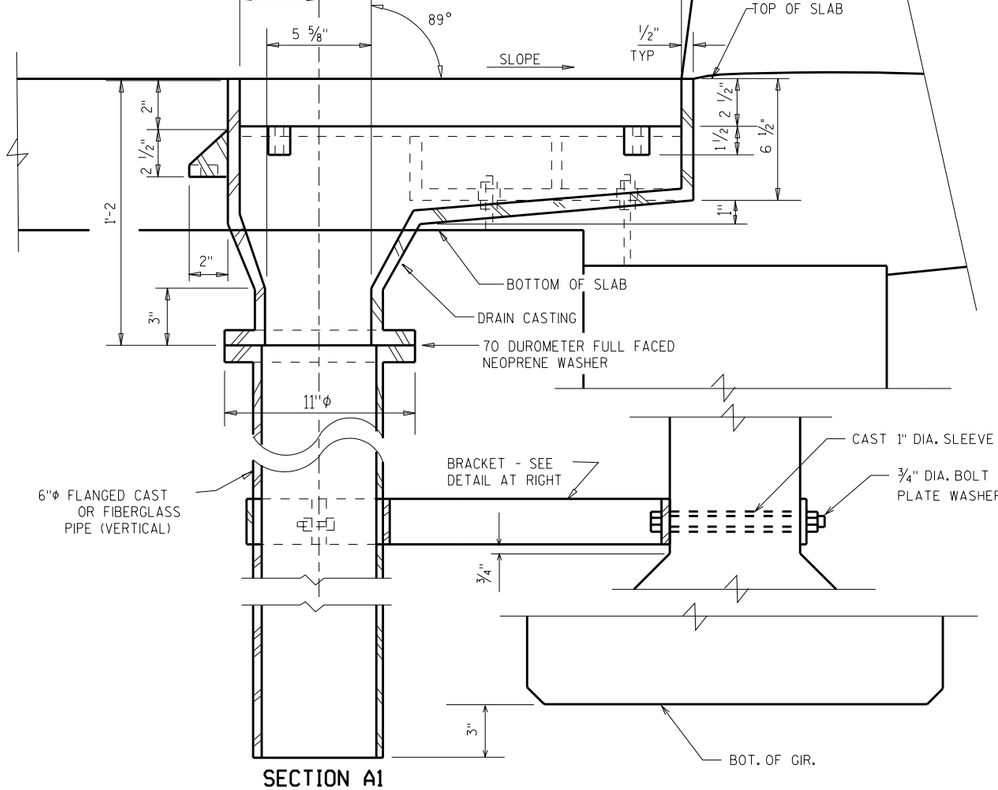
MATERIAL FOR BRACKETS SHALL CONFORM TO A.S.T.M. A36.

THE CONTRACTOR MAY PROPOSE AN ALTERNATE TYPE OF BRACKET. THE PROPOSED ALTERNATE DETAILS SHALL BE SUBMITTED AND SUBJECT TO THE APPROVAL OF THE ENGINEER.

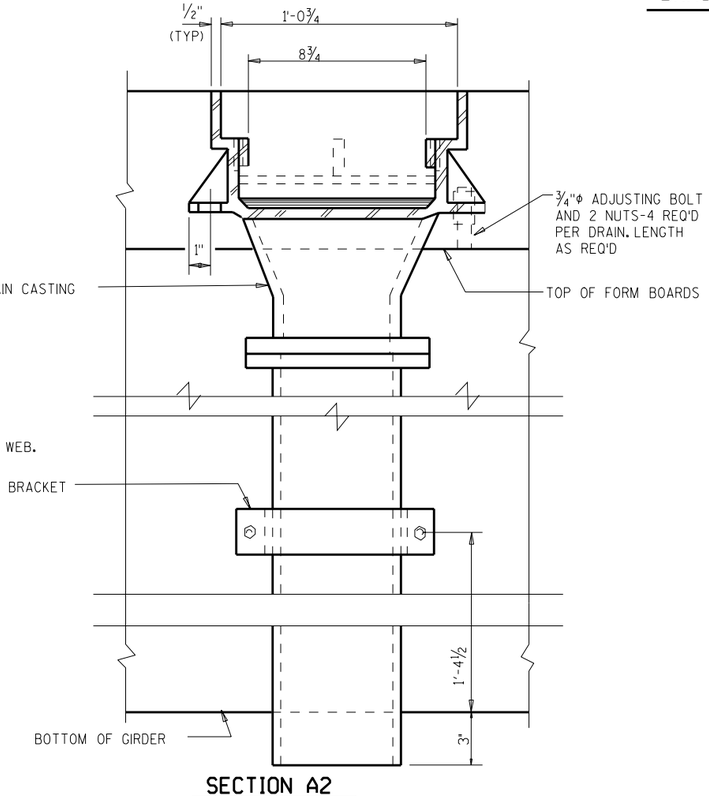
FLANGED 6" DIA. DOWNSPOUTS SHALL BE EITHER CAST MATERIAL OR FIBERGLASS CONFORMING TO A.S.T.M. D2996, GRADE 1, CLASS A.



BRACKET DETAIL



SECTION A1



SECTION A2

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

FLOOR DRAIN TYPE 'GC'

SHEET

8

FILE= DRAINGC.DGN
SCALE = :1

9-1-94

STATE PROJECT NUMBER	SHEET NO.
- -	

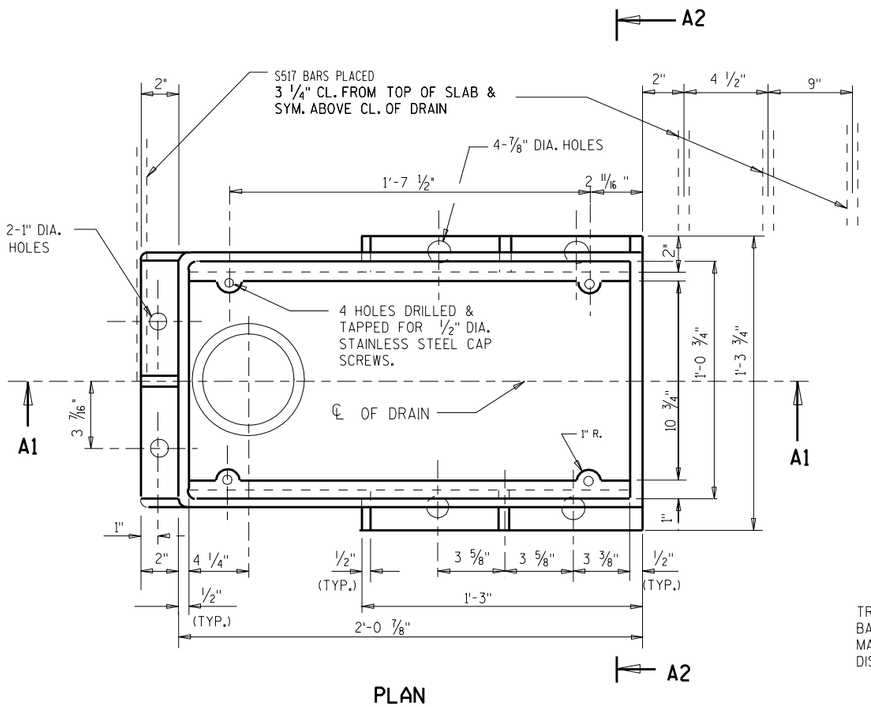
GENERAL NOTES

ALL MATERIAL FOR TYPE "GC" CASTING, EXCLUDING GRATE HOLD DOWN SCREWS, SHALL BE GRAY IRON CONFORMING TO A.S.T.M. A48, CLASS 30. (APPROX. WEIGHT = 225#)

MATERIAL FOR BRACKETS SHALL CONFORM TO A.S.T.M. A36.

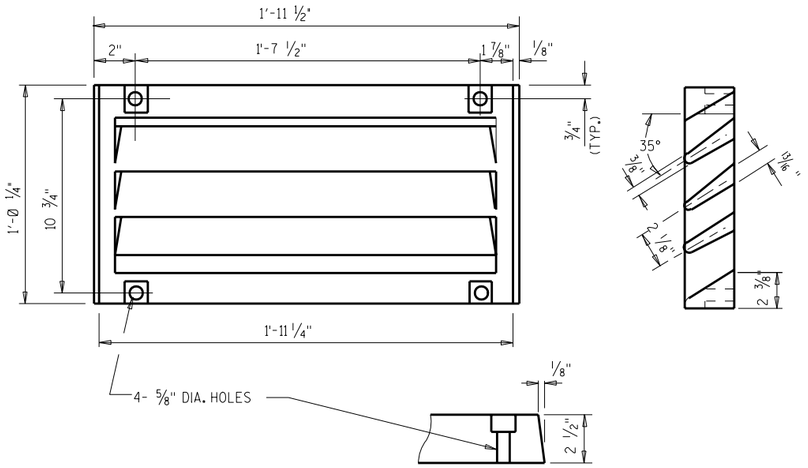
THE CONTRACTOR MAY PROPOSE AN ALTERNATE TYPE OF BRACKET. THE PROPOSED ALTERNATE DETAILS SHALL BE SUBMITTED AND SUBJECT TO THE APPROVAL OF THE ENGINEER.

FLANGED 6" DIA. DOWNSPOUTS SHALL BE EITHER CAST MATERIAL OR FIBERGLASS CONFORMING TO A.S.T.M. D2996, GRADE 1, CLASS A.



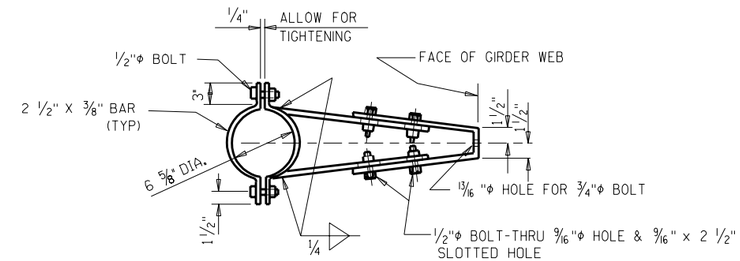
PLAN

TRANS. AND LONGIT. SLAB BAR REINF. TO BE CUT A MAX. 1" CL. FROM DRAIN DISPLACE BARS WHERE POSSIBLE

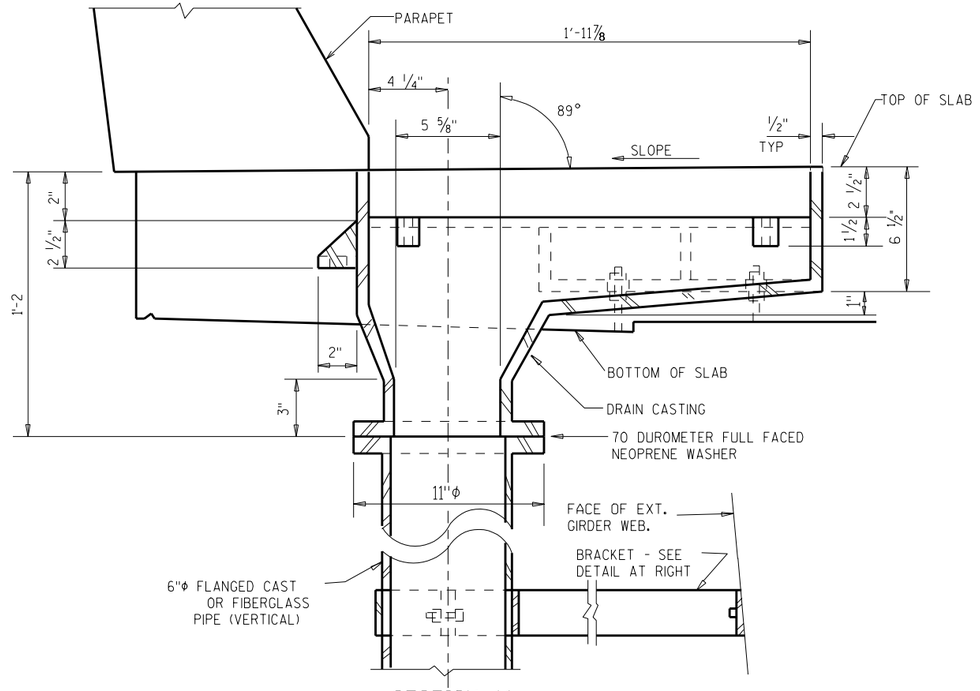


GRATE CASTING DETAIL

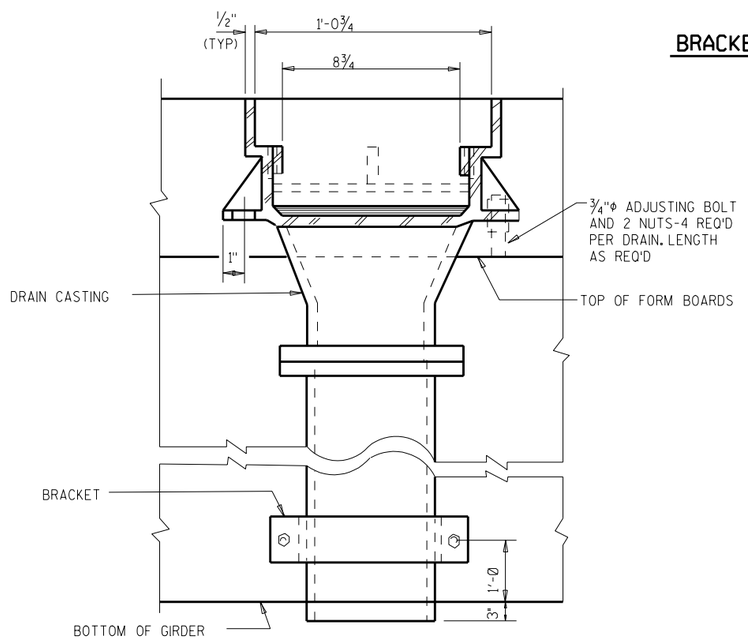
ATTACH GRATE TO FRAME FOR SHIPMENT



BRACKET DETAIL



SECTION A1



SECTION A2

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

FLOOR DRAIN
TYPE ' GC '

SHEET

8

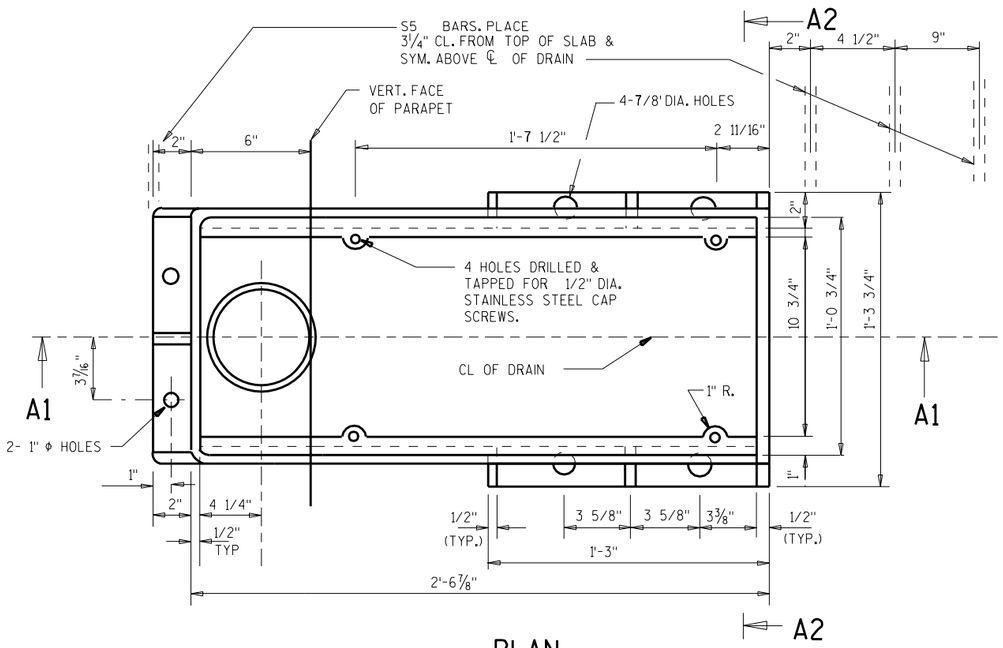
FILE= DRAINGC-OUT.DGN
SCALE = :1

4/96

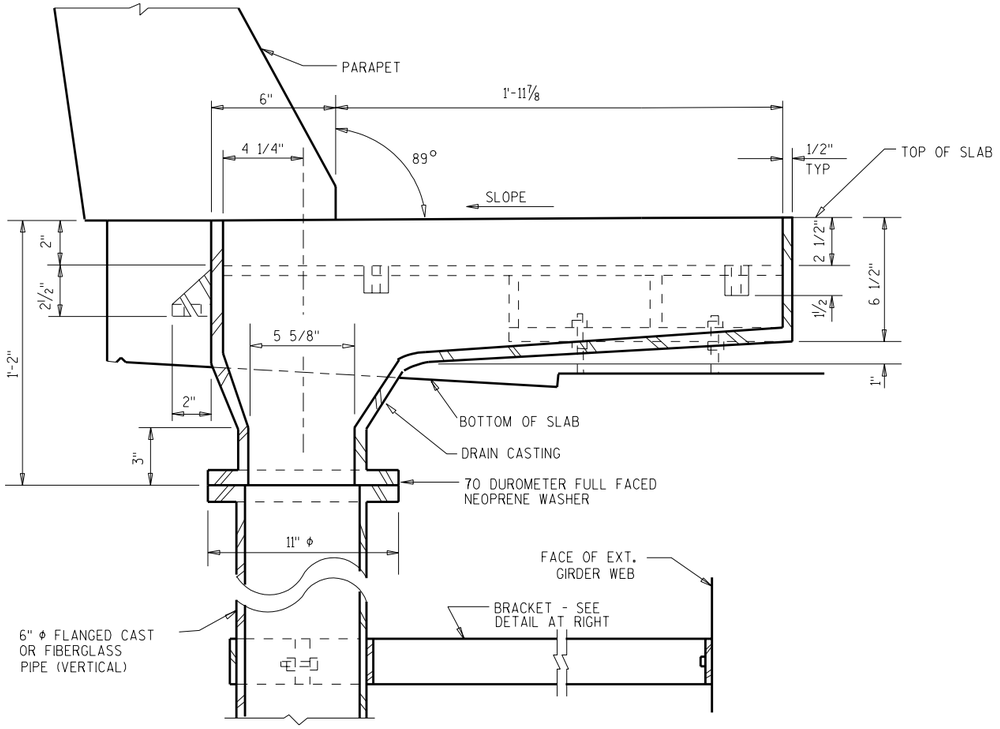
9-1-94

STATE PROJECT NUMBER

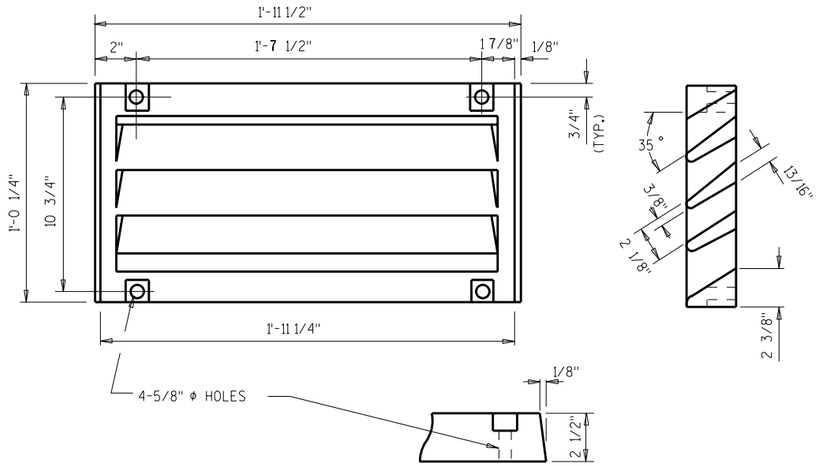
- -



PLAN



SECTION A1



GRATE CASTING DETAIL

ATTACH GRATE TO FRAME FOR SHIPMENT

GENERAL NOTES

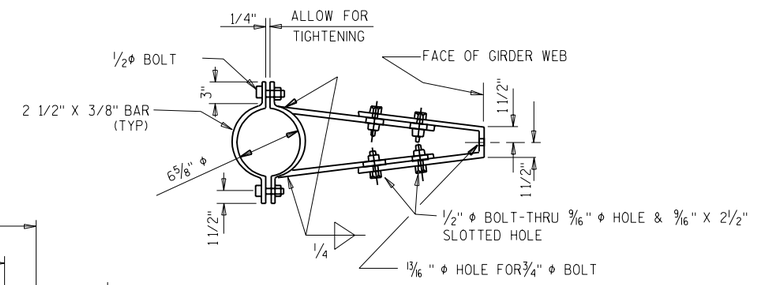
ALL MATERIAL FOR TYPE "HC" CASTING EXCLUDING GRATE HOLD DOWN SCREWS, SHALL BE GRAY IRON CONFORMING TO A.S.T.M. A48 CLASS 30. (APPROX. WEIGHT = 260#)

MATERIAL FOR BRACKET SHALL CONFORM TO A.S.T.M. A36

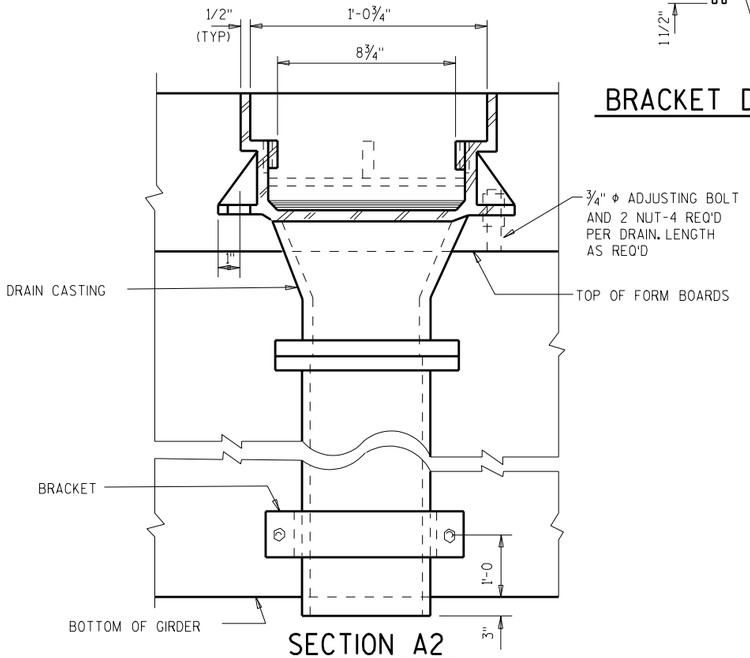
THE CONTRACTOR MAY PROPOSE AN ALTERNATE TYPE OF BRACKET. THE PROPOSED ALTERNATE DETAILS SHALL BE SUBMITTED AND SUBJECT TO THE APPROVAL OF THE ENGINEER.

FLANGED 6" ϕ DOWNSPOUTS SHALL BE EITHER CAST MATERIAL OR FIBERGLASS CONFORMING TO A.S.T.M. D2996, GRADE 1 CLASS A.

TRANS. AND LONGIT. SLAB BAR REINF. TO BE CUT A MAX. 1" CL. FROM DRAIN. DISPLACE BARS WHERE POSSIBLE



BRACKET DETAIL



SECTION A2

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

FLOOR DRAIN TYPE HC

SHEET

8

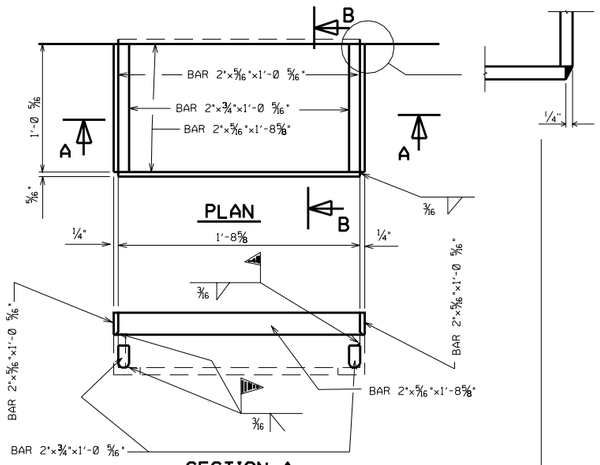
FILE= DRAINHC.DGN
SCALE =

4-87

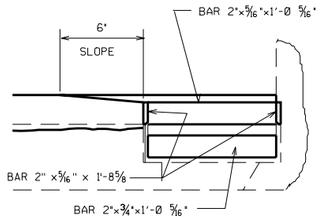
9-1-94

STATE PROJECT NUMBER

- -



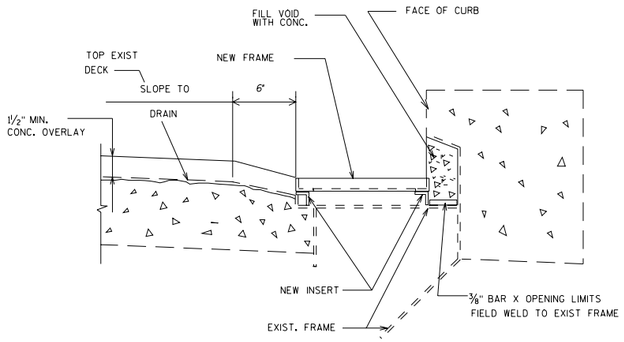
SECTION A



SECTION B

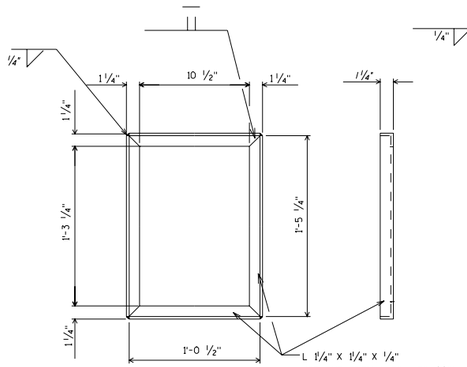
DRAIN DETAILS

NOTE: ALL MATERIAL AND WORK TO BE INCLUDED IN 'ADJUSTING FLOOR DRAINS'. UTILIZE EXIST. GRATE. TACK WELD TO FRAME.

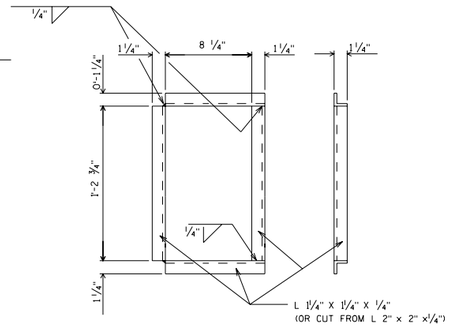


DRAIN RAISING DETAILS

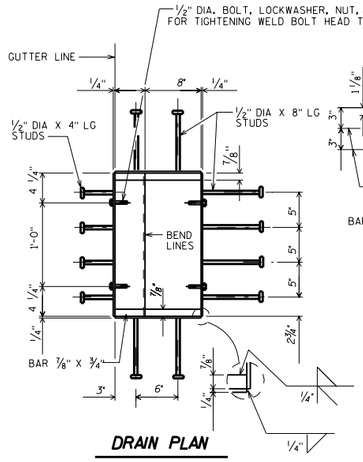
FRAMES & INSERTS TO BE INCLUDED IN PRICE BID FOR 'CONCRETE MASONRY OVERLAY'.
FIELD WELD NEW INSERT TO EXIST. FRAME& NEW FRAME TO NEW INSERT.
SALVAGE & REUSE OLD GRATE. TACK WELD TO NEW FRAME



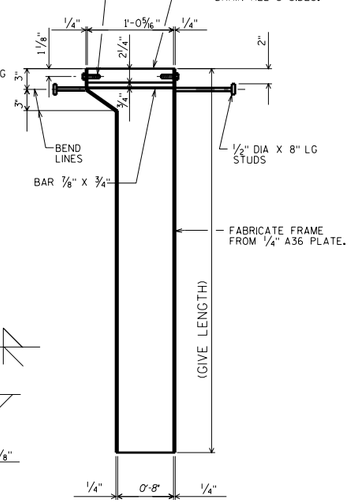
FRAME DETAILS



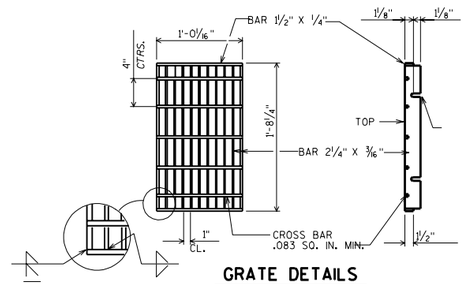
INSERT DETAILS



DRAIN PLAN

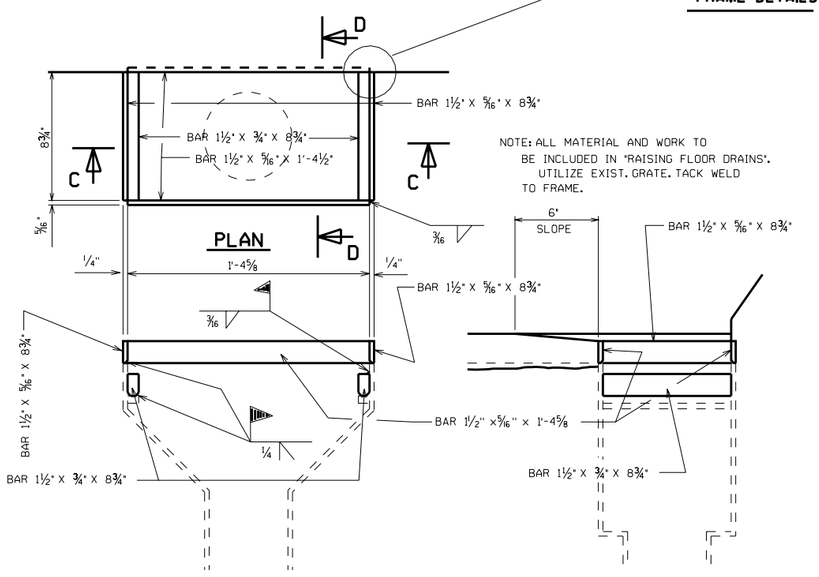


DRAIN ELEVATION



GRATE DETAILS

SEAL WELD INSIDE OF DRAIN TO OBTAIN A WATERTIGHT CHAMBER.
ALL DRAIN MATERIAL INCLUDING GRATE SHALL BE A36 STEEL & ALL STEEL SHALL BE GALVANIZED.
WELDS SHALL BE MADE WITH LOW HYDROGEN ELECTRODES.
*PRIOR TO GALV. A *6 BLAST CLEANING IS REQ'D.*



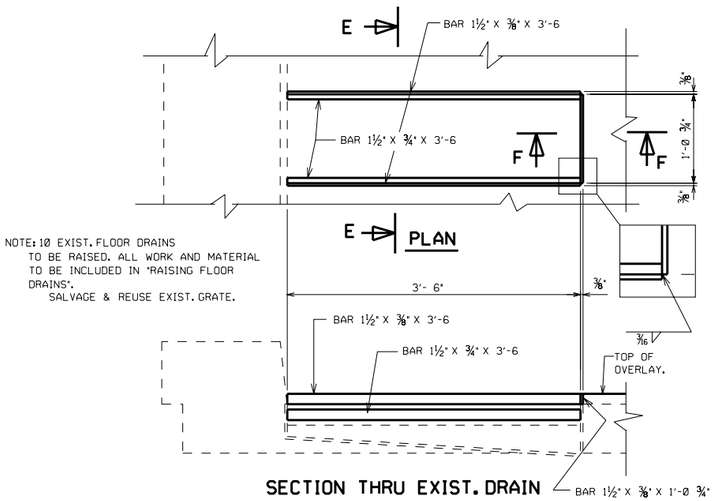
SECTION C

SECTION D

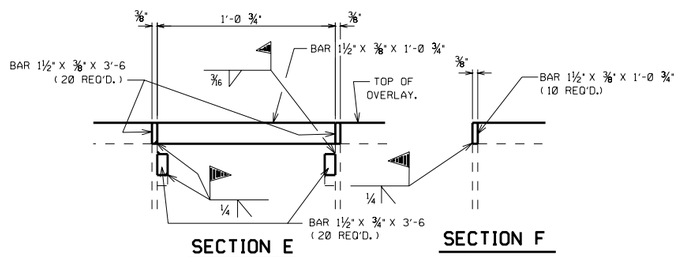
DRAIN DETAILS

NOTE: ALL MATERIAL AND WORK TO BE INCLUDED IN 'RAISING FLOOR DRAINS'. UTILIZE EXIST. GRATE. TACK WELD TO FRAME.

NOTE: 10 EXIST. FLOOR DRAINS TO BE RAISED. ALL WORK AND MATERIAL TO BE INCLUDED IN 'RAISING FLOOR DRAINS'. SALVAGE & REUSE EXIST. GRATE.



SECTION THRU EXIST. DRAIN



SECTION E

SECTION F

NO.	DATE	REVISION	BY

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

DRAIN DETAILS

SHEET

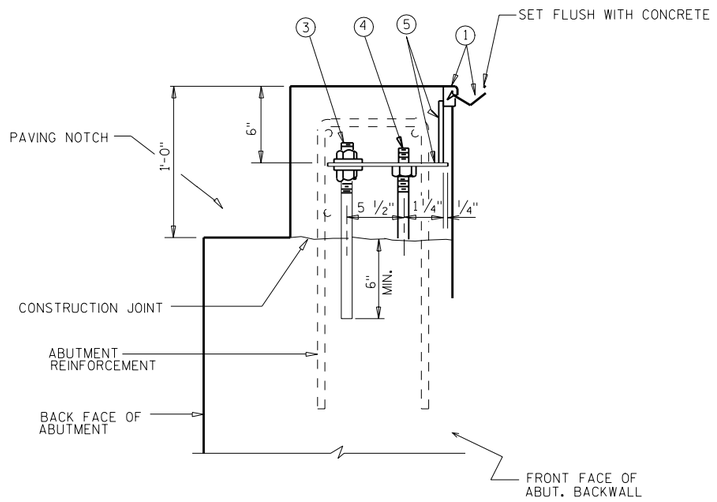
8

FILE= DRAINSRA.DGN
SCALE =

9-1-94

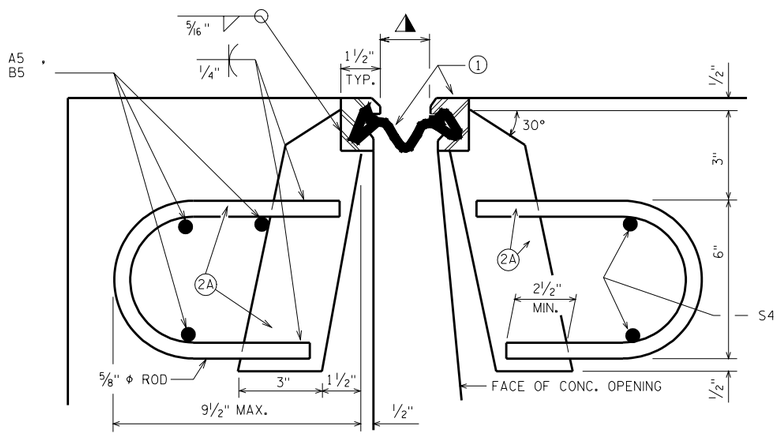
STATE PROJECT NUMBER

- -



SECTION THRU JOINT AT ABUTMENT

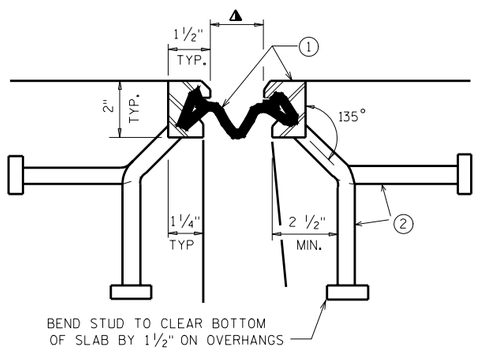
NORMAL TO ℄ SUBSTRUCTURE



AT PAVING BLOCK AT SLAB

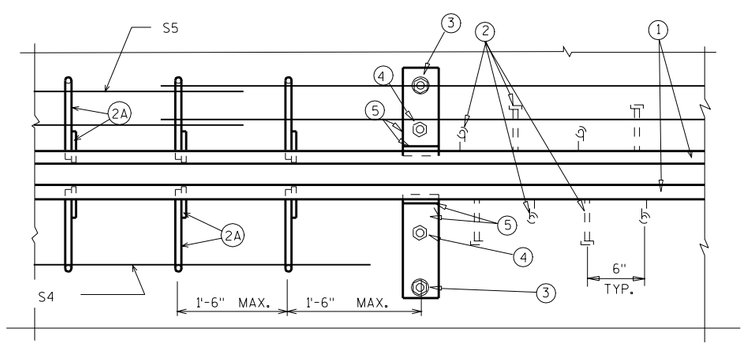
SECTION THRU JOINT

ROADWAY TRAFFIC AREA BETWEEN EXTERIOR GIRDERS.



SECTION THRU JOINT

EXTERIOR GIRDER TO EDGE OF SLAB & AT PARAPETS, MEDIAN & SIDEWALKS



PART PLAN

LEGEND

1. NEOPRENE STRIP SEAL (_ - INCH) & STEEL EXTRUSIONS.
   ⚠ SET JOINT OPENING AT 1¾" WHEN EXPANSION LENGTH ≤ 230'-0". WHEN EXPANSION LENGTH > 230'-0", PREPARE A TEMPERATURE TABLE SHOWING JOINT OPENINGS AT 85° F, 40° F, & -5° F.
2. STUDS 5/8" ϕ X 6 3/8" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSIONS & BEND AS SHOWN AFTER WELDING.

2A. 3" x 1/2" ANCHOR PLATE WITH 5/8"ϕ ROD (OR ALTERNATE STRIP SEAL ANCHOR). WELD ROD TO ANCHOR PLATE. WELD ANCHOR PLATE TO #1 AT 1'-6" CTRS. BETWEEN GIRDERS.

4. ¾"ϕ THREADED ROD WITH NUT. TACK WELD NUT TO NO. 5.
5. FABRICATE SUPPORT FROM 3" X 1/2" BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER PER SIDE. FIELD OR SHOP WELD TO NO. 1. IF FIELD WELDED, COVER WELDED AREAS WITH EPOXY-COATING MATERIAL. PROVIDE 1 1/2" ϕ HOLE FOR NO. 3 & 1" ϕ HOLE FOR NO. 4.

GENERAL NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS. IF USED, DETAILS SHALL BE SUBMITTED FOR APROVAL. NO SPLICING PERMITTED IN NEOPRENE STRIP SEAL.

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST & SWEEP.

FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN & SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

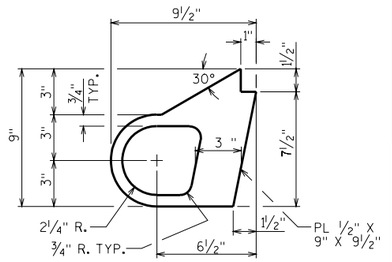
SANDBLAST PLATES & EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMERCIAL BLAST CLEANING". AFTER BLAST CLEANING THE PLATES & EXTRUSIONS SHALL BE HOT DIPPED GALVANIZED.

ANCHOR SYSTEM #8 & #9 SHALL CONFORM TO ASTM A307 & SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 CLASS C & D.

STRIP SEAL EXPANSION JOINT ASSEMBLY, INCLUDING ANCHOR STUDS & HARDWARE WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE".

⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.

◪ JOINT OPENING DIM. ALONG SKEW PLUS 1/2".



ALTERNATE STRIP SEAL ANCHOR

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DEPARTMENT OF TRANSPORTATION
STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

EXPANSION DEVICE

SHEET

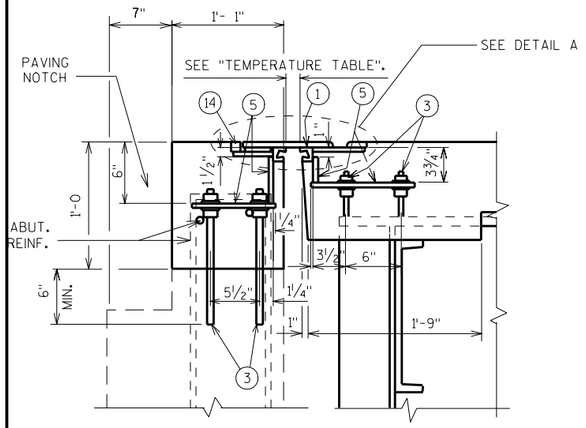
8

FILE= JT400SS.DGN
SCALE =

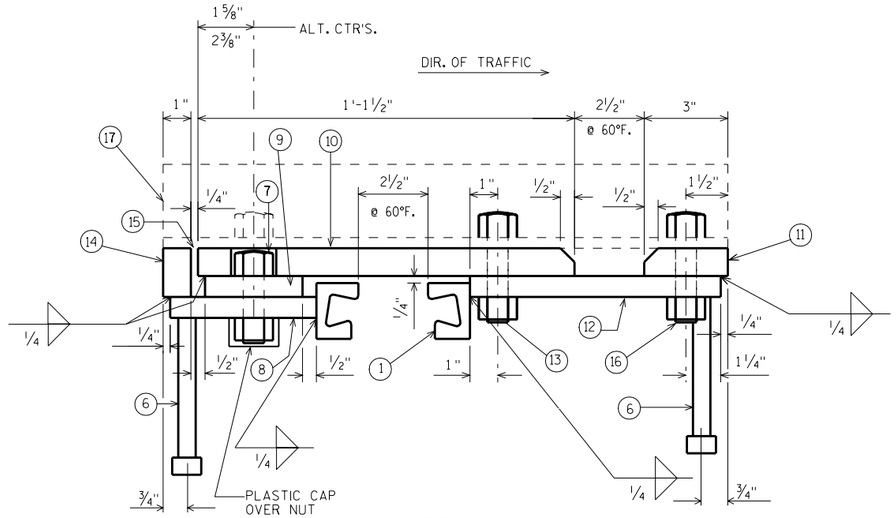
1-02

1 2

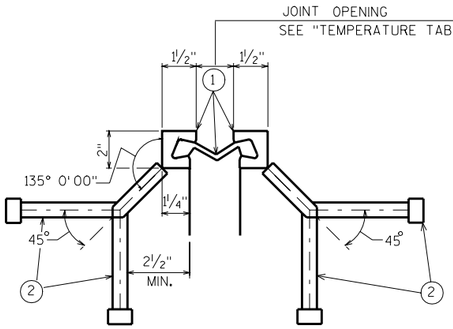
STATE PROJECT NUMBER
- -



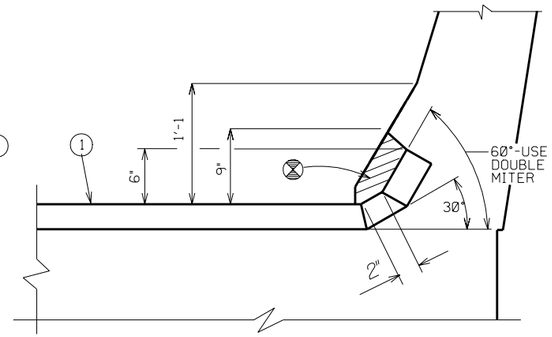
SECTION THRU PROPOSED JOINT



DETAIL A

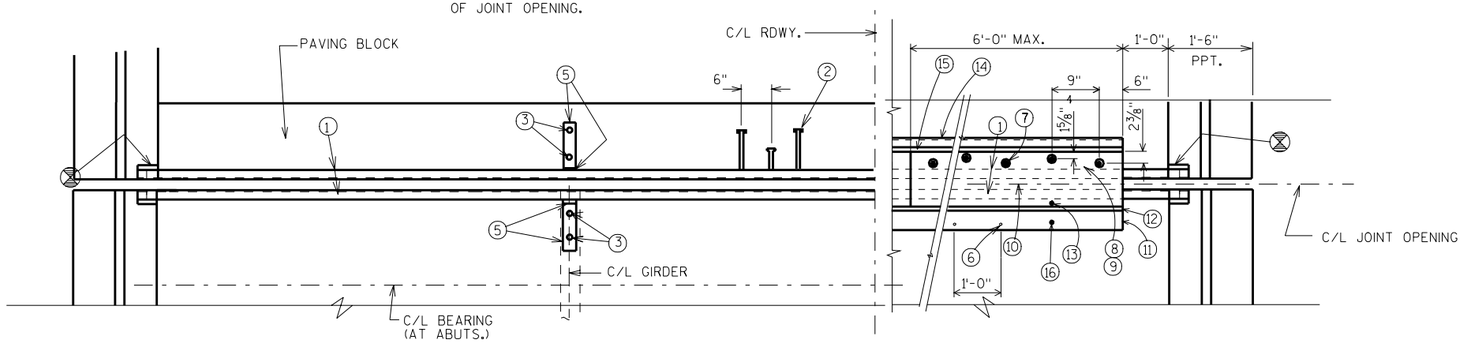


JOINT SECTION



SECTION AT CURB

⊗ BLOCK OUT CONCRETE 2" EACH SIDE OF JOINT OPENING.



PLAN OF PROPOSED JOINT

LEGEND

(1) NEOPRENE STRIP SEAL & STEEL EXTRUSIONS D.S.BROWN SS-600 EXTRUSIONS TO BE EITHER A.S.T.M. A-36 , A-588 , A242.

(2) STUDS ⅝" DIA. X 6⅜" LONG AT 6" ALTERNATE CENTERS. WELD TO EXTRUSION & BEND AS SHOWN AFTER WELDING.

(3) SUPPORT ROD ¾ " DIA. WITH 2 NUTS & WASHERS. THRD. ONE END 4" AT SUPER. SIDE OF JT. WELD ROD TO TOP GIRDER FLG. OR ATTACH BY BOLTING THRU FLG. AT ABUT. SIDE THRD. ROD INTO FIELD DRILLED HOLES IN ABUT. BACKWALL AS SHOWN. GROUT

(5) FABRICATE SUPPORT FROM 3" X ½" BAR AS SHOWN OR EQUIVALENT, ONE PER GIRDER. SHOP WELD TO NO. 1. PROVIDE 1½" DIA. HOLE FOR NO. 3 & 1" DIA. HOLE FOR NO. 4.

(6) ANCHOR STUDS ⅝" DIA. X 6⅜" LONG. WELD TO NO. 12 & NO. 8 AS SHOWN. BEND TO CLEAR JOINT OPENING.

(7) ¾" DIA. HEX HEAD. STAINLESS STEEL BOLT, & HEX HEAD NUT. WELD NUT TO NO. 8. PROVIDE NUT WITH 1" DEEP PLASTIC CAP OVER NUT TO KEEP CONC. FROM ENTERING BOLT CAVITY. SPA. @ 9" CTRS. (USE BOLT WITH 2⅞" GRIP FOR INSTALLATION)

(8) BAR 5¼" X ¾" X LIMITS SHOWN. WELD TO NO. 1. PROVIDE HOLES FOR NO. 7.

(9) BAR 3½" X ¾" X LIMITS SHOWN WELD TO NO. 10. PROVIDE HOLES FOR NO. 7.

(10) PLATE 1" X 1'-1½" X LIMITS SHOWN 6'-0" MAX. LONG. PROVIDE 1⅝" ϕ HOLES FOR NO. 7. PROVIDE SLOTTED HOLE FOR NO. 13 FOR ADJUSTMENT.

(11) BAR 3" X 1" X LIMITS SHOWN. WELD TO NO. 12.

(12) BAR 9 ¾" X ¾" X LIMITS SHOWN WELD TO NO. 1.

(13) ¾" DIA. BOLTS @ 9" CTRS. TACK WELD NUT TO NO. 12 GREASE FOR EASY REMOVAL. PROVIDE SLOTTED HOLE IN NO. 10 FOR ADJUSTMENT.

(14) BAR 1" X 1¾" X LIMITS SHOWN. WELD TO NO. 8.

(15) FILL WITH HOT POURED ELASTIC TYPE JOINT SEALER.

(16) ¾" DIA. BOLTS @ 9 " CTR'S. TACK WELD TO NO. 12 GREASE FOR EASY REMOVAL.

(17) L 3" X 3" X ⅜". PROVIDE 1⅛ " ϕ SLOTTED HOLES FOR " 13 & " 16. PLACE TWO " 17'S PER EACH " 10.

SEAL NOTES

NO SPLICING OF NEOPRENE SEAL PERMITTED.

SAND BLAST CLEAN STEEL EXTRUSIONS PRIOR TO COATING WITH LUBRICANT ADHESIVE FOR NEOPRENE SEAL.

STRIP SEAL EXPANSION JOINT ASSEMBLY , STUDS AND HARDWARE , WILL BE PAID FOR AT THE LUMP SUM PRICE BID FOR "EXPANSION DEVICE."

AFTER THE JOINT IS SET & "3 IS WELDED TO THE GIRDER OR SET IN GROUT "13 & " 16 SHALL BE MADE "FINGER TIGHT" TO ALLOW FOR TEMPERATURE MOVEMENT OF THE BRIDGE.

AFTER CONC. IS PLACED " 13 & " 16 SHALL BE REMOVED & HOLES FILLED WITH HOT POURED ELASTIC TYPE JOINT FILLER.

REMOVE " 17 AFTER CONCRETE HAS SET AND PLACE STAINLESS STEEL " 7.

TEMPERATURE TABLE

	JOINT OPENING	
TEMP.		
120 °		
90 °		
60 °		
30 °		
0 °		
- 30 °		

SHADED UNDERSIDE DECK TEMPERATURE (°F.)

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STRUCTURE

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EXPANSION JOINT

SHEET

8

FILE= JT600SS.DGN
SCALE =

9-1-94

STATE PROJECT NUMBER

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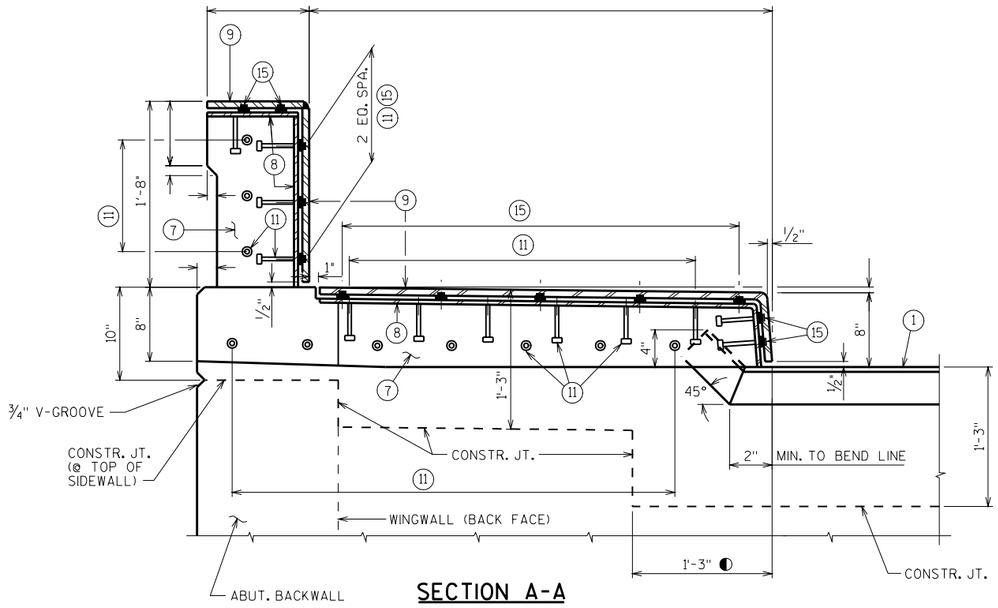
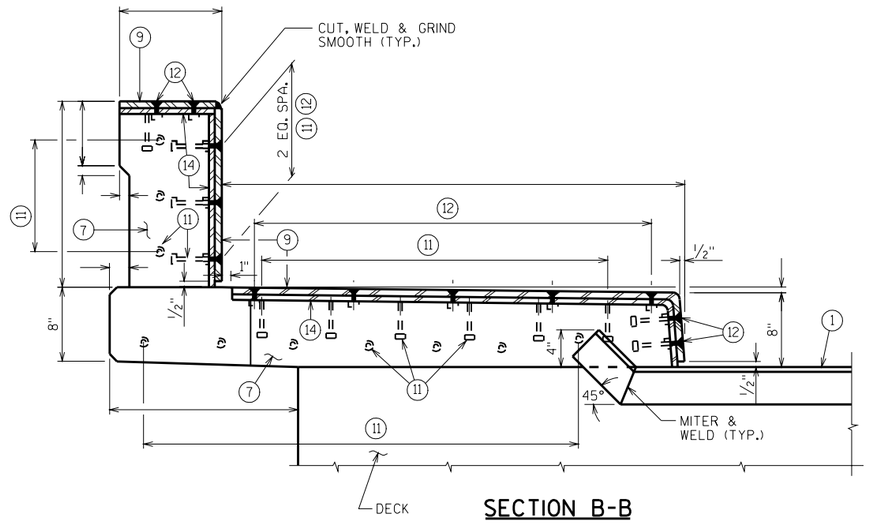


SECTION A-A



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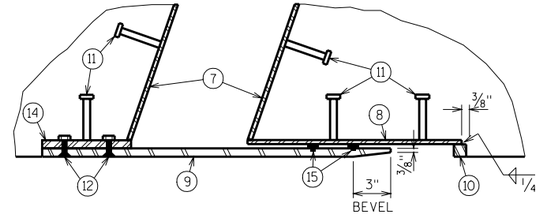

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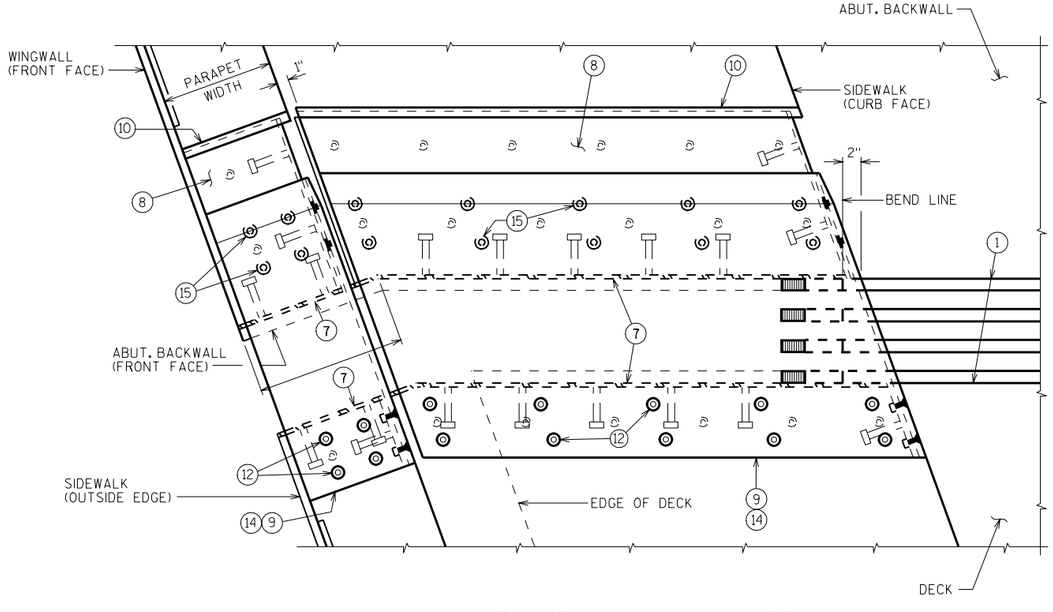
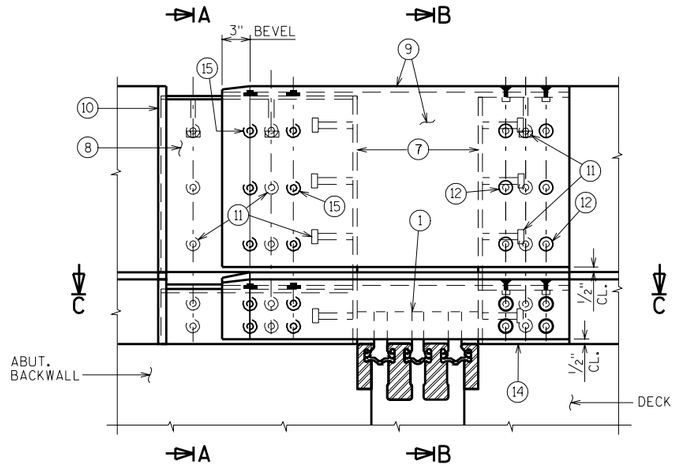
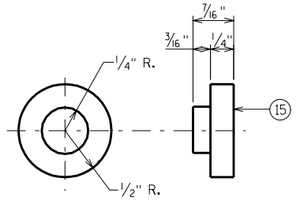


PLAN OF SIDEWALK W/ PARAPET



ELEVATION OF SIDEWALK W/ PARAPET

DIRECTION OF TRAFFIC



ADIPRENE BUTTON DETAIL

◐ PERPENDICULAR TO FACE OF CURB

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STATE OF WISCONSIN
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STRUCTURES DESIGN SECTION

STRUCTURE

CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

COVER PLATES FOR SIDEWALK W/CONC. PARAPET

SHEET

8

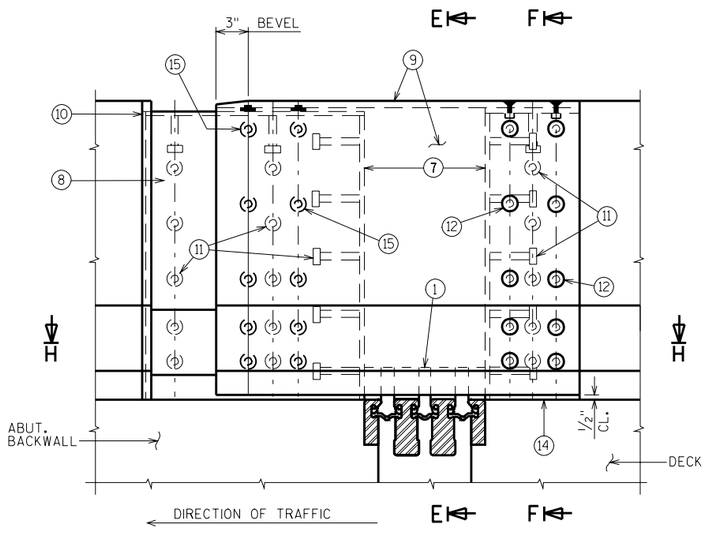
12345

FILE= JTMODCVR1.DGN
SCALE =

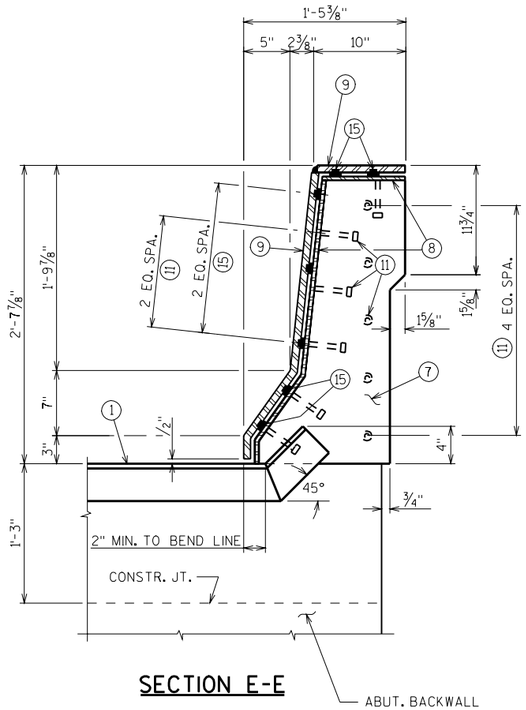
7-02

STATE PROJECT NUMBER

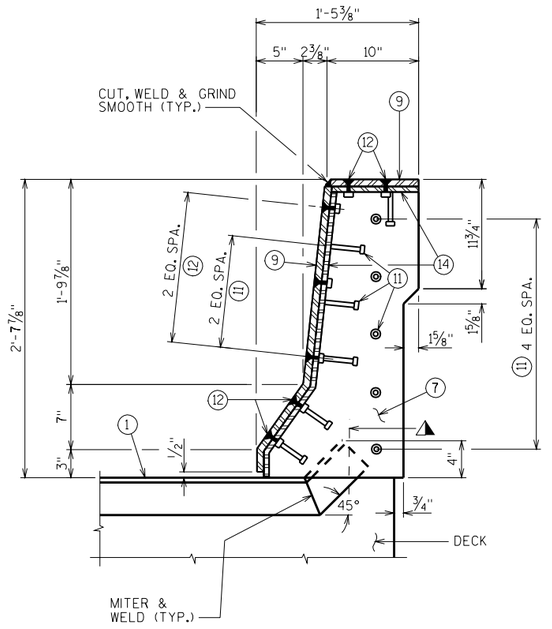
- -



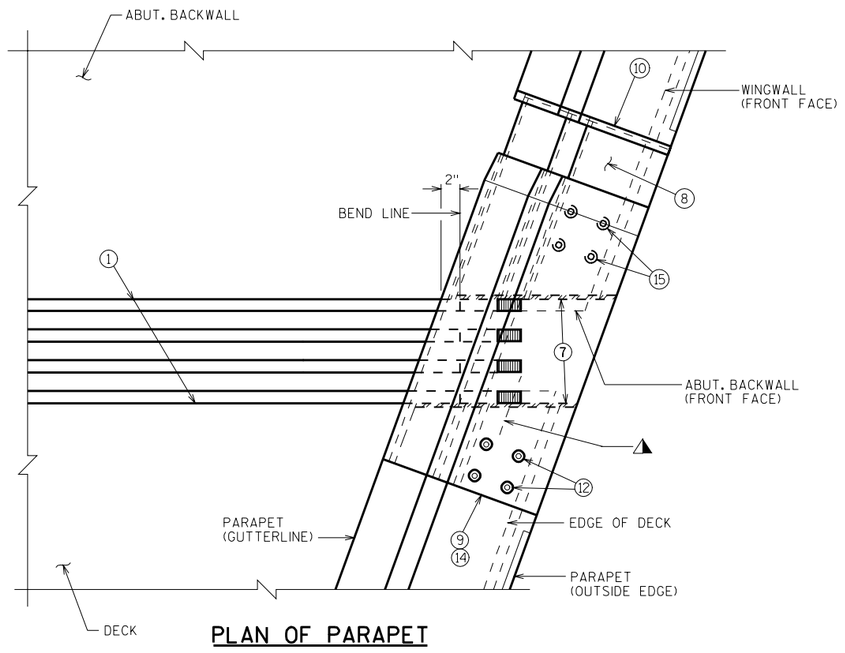
ELEVATION OF PARAPET



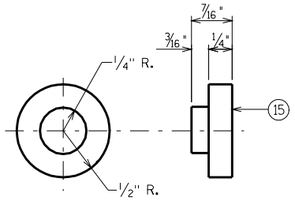
SECTION E-E



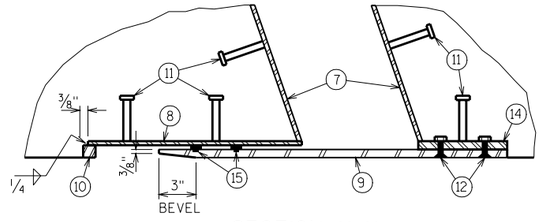
SECTION F-F



PLAN OF PARAPET



ADIPRENE BUTTON DETAIL



SECTION H-H

MITER EXTRUSION ENDS AS REQ'D TO PROVIDE CLEARANCE

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COVER PLATES FOR PARAPET 'LF'

SHEET

8

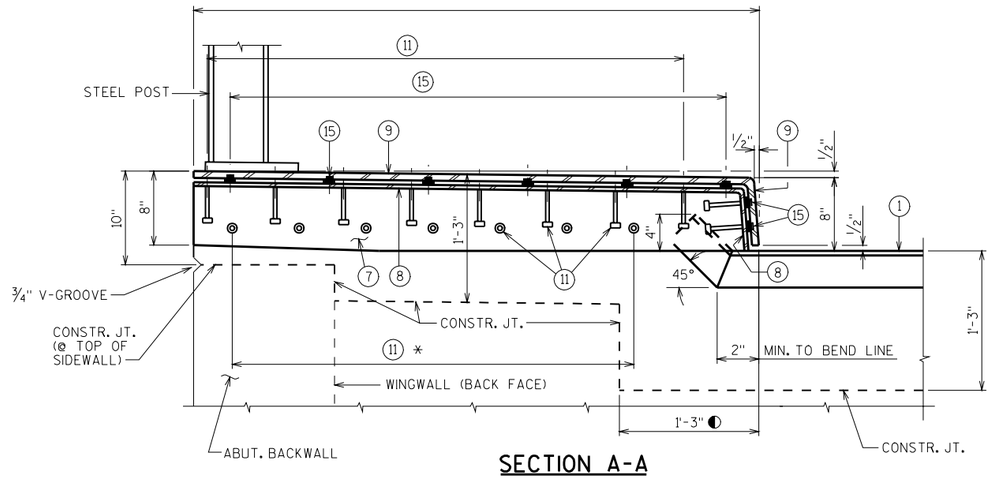
FILE= JTMODCVR2.DGN
SCALE =

12345

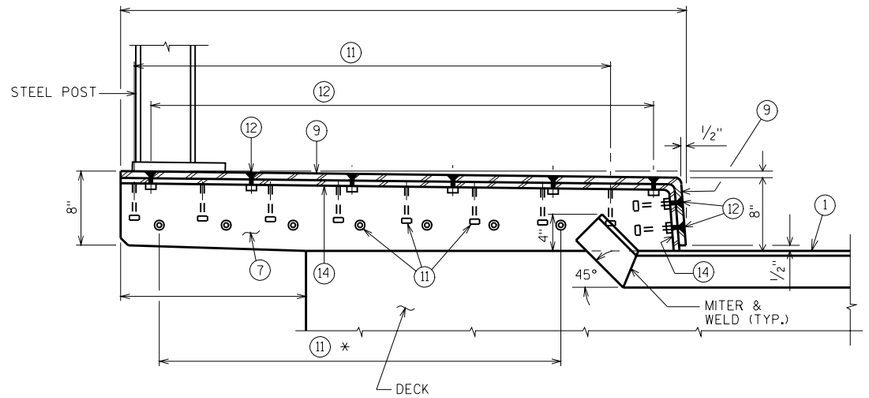
7-02

STATE PROJECT NUMBER

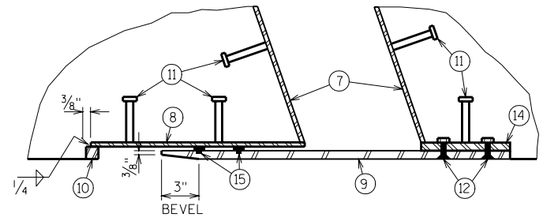
- -



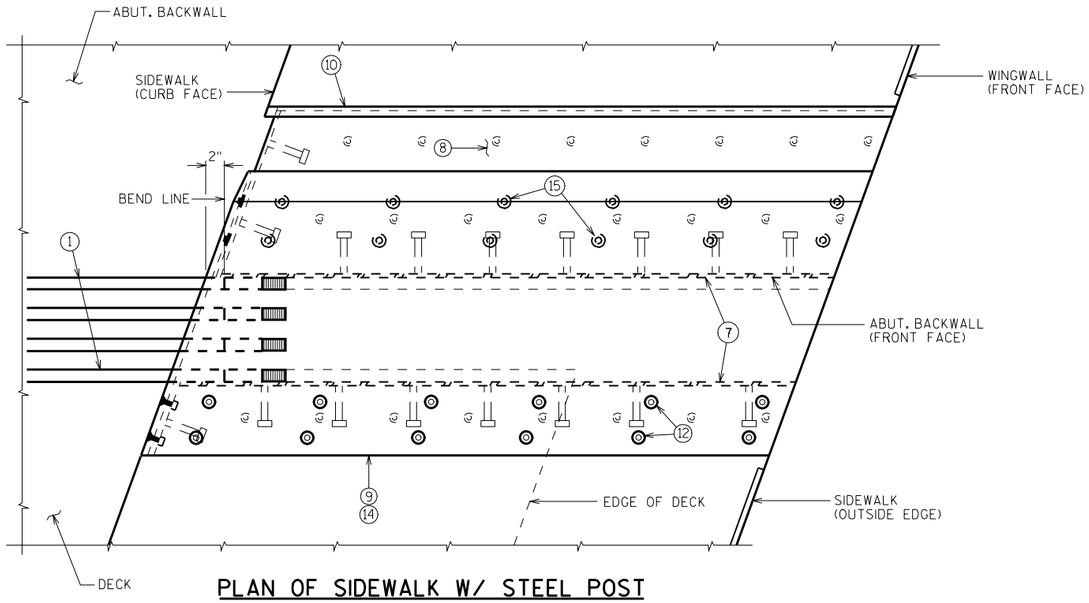
SECTION A-A



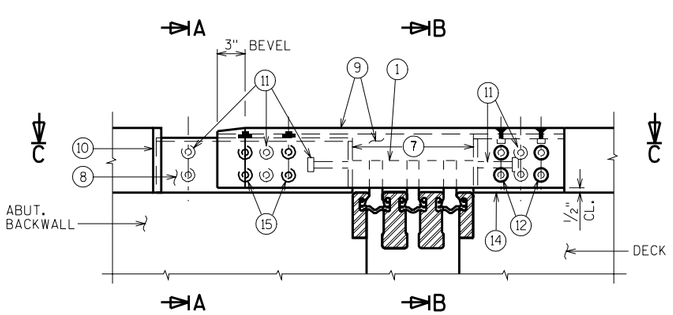
SECTION B-B



SECTION C-C

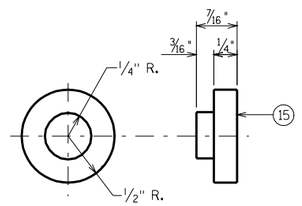


PLAN OF SIDEWALK W/ STEEL POST



ELEVATION OF SIDEWALK W/ PARAPET

DIRECTION OF TRAFFIC



ADIPRENE BUTTON DETAIL

8

NO.	DATE	REVISION	BY

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STRUCTURES DESIGN SECTION

STRUCTURE

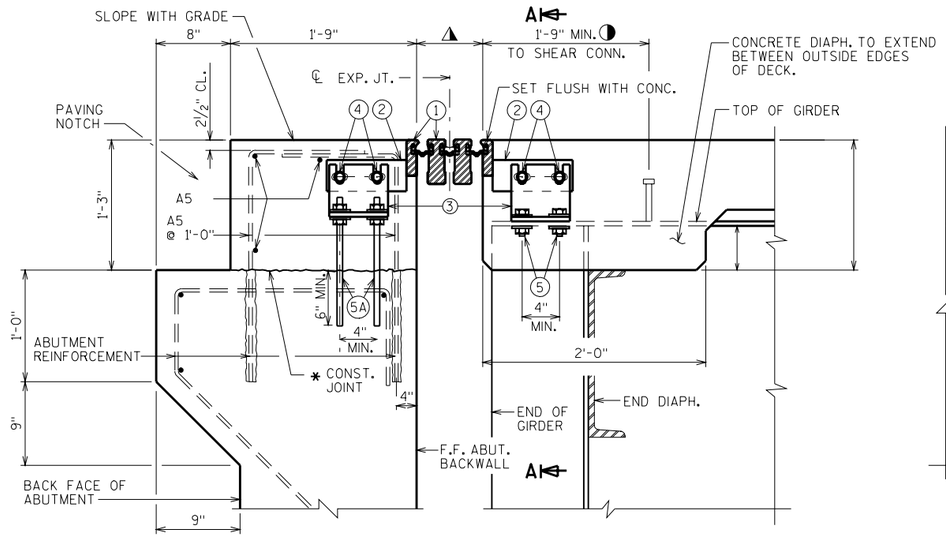
CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.

COVER PLATES FOR SIDEWALK W/STEEL RAIL

SHEET

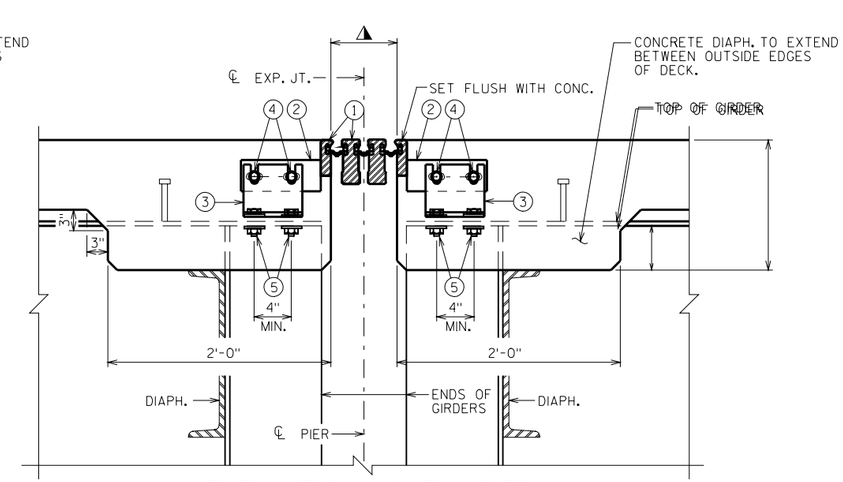
FILE= JTMODCVR3.DGN
SCALE =

STATE PROJECT NUMBER
- -



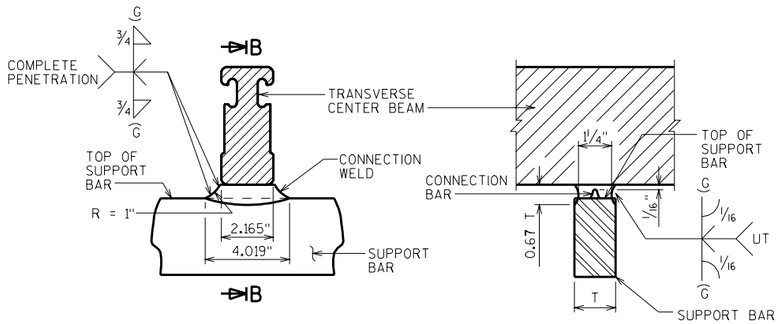
SECTION THRU JOINT @ ABUTMENT

NORMAL TO ℄ SUBSTRUCTURE



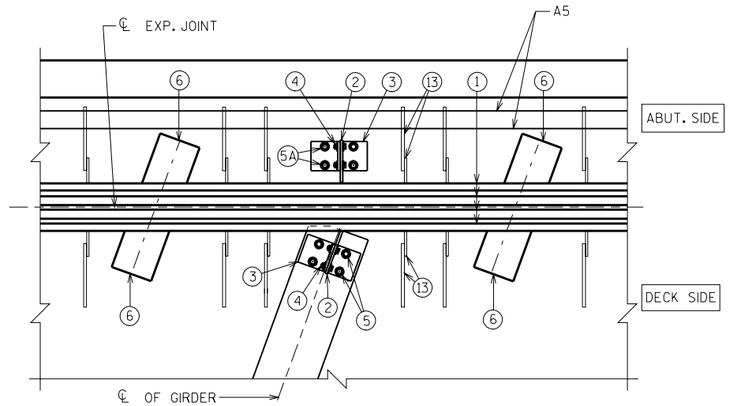
SECTION THRU JOINT @ PIER

NORMAL TO ℄ SUBSTRUCTURE



MODULAR EXPANSION JOINT CONNECTION DETAIL AND WELD SPECIFICATION

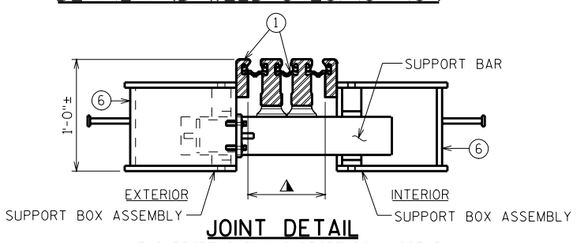
SECTION B-B



PART PLAN

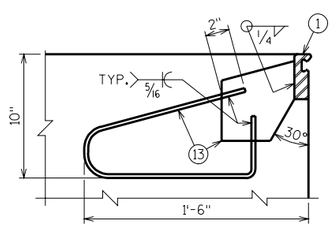
NOTE:
FABRICATOR WILL DESIGN EACH JOINT DEPENDING ON THE CONDITIONS AND THE DESIGN CRITERIA USED BY THE SUPPLIER. FABRICATION DRAWING IS SUBJECT TO THE APPROVAL OF THE BUREAU OF STRUCTURES.

SUPPORT BOXES ARE SHOWN FOR GENERAL INFORMATION AND LOCATION MAY VARY ACCORDING TO FABRICATOR DESIGN.



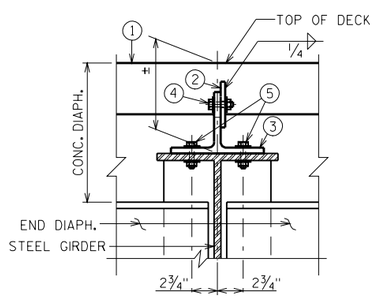
JOINT DETAIL

AT SUPPORT BAR & SUPPORT BOX ASSEMBLY



ANCHORAGE DETAIL

PLACE ADJACENT TO SUPPORT BOXES IN PAVING BLOCK @ ABUT. & IN DECK @ CONC. DIAPH.



SECTION A-A

LEGEND

1. MODULAR EXPANSION JOINT DEVICE.
2. ½" PLATE, ONE PER GIRDER MIN. PROVIDE 2 - 1" X 2" MIN. SLOTTED HOLES PLACED HORIZONTALLY FOR NO. 4.
3. WT 6 X 29 (OR EQUIVALENT BUILT UP T-SECTION). ONE PER GIRDER. PROVIDE 2 - 1" X 3" MIN. SLOTTED HOLES PLACED VERTICALLY IN WEB OF WT FOR BOLTS NO. 4.
4. ¾" ϕ HIGH STRENGTH BOLTS WITH NUTS & WASHERS. (A325 GALV.)
5. ¾" ϕ HIGH STRENGTH BOLTS WITH NUTS & WASHERS. FIELD DRILL HOLES IN GIRDER TOP FLANGE. (A325 GALV.)
5A. ¾" ϕ THREADED ROD WITH 2 NUTS & WASHERS. GROUT THREADED ROD INTO FIELD DRILLED HOLES. (GALV.)
6. SUPPORT BOX ASSEMBLY FOR SUPPORT BAR (SPA. PER MANUFACTURER). SPACE TO MISS GIRDERS. FABRICATE BOX FROM ½" PLATES.
7. ⅜" BULKHEAD PLATE. WELD TO NO. 1, NO. 8 AND NO.14.
8. INSIDE PLATE. FABRICATE FROM ⅜" PLATE.
9. OUTSIDE PLATE. FABRICATE FROM ⅝" PLATE.
10. ⅞" SQUARE BAR. WELD TO NO. 8 AS SHOWN.
11. ¾" ϕ X 4" LONG STUDS. WELD TO NO. 8 , NO. 7 & NO. 14 AS SHOWN.
12. ¾" ϕ X 2" STAINLESS STEEL FLAT CTSK. SLOTTED HEAD CAP SCREWS. RECESS 1/16" BELOW PLATE SURFACE.
13. ½" PLATE WITH ⅝" ϕ LOOP ANCHOR FABRICATED AS SHOWN. SPACED AT MANUFACTURER'S SPEC.
14. INSIDE PLATE. FABRICATE FROM ⅝" PLATE
15. ADIPRENE BUTTON. SEE DETAIL. SET IN OUTSIDE PLATE.

* POUR CONC. ABOVE THIS JOINT AFTER SUPERSTRUCTURE CONC. IS IN PLACE. STRIKE OFF & LEAVE ROUGH.

⚠ MANUFACTURER'S RECOMMENDED JOINT OPENING BASED ON THE TEMPERATURE ON THE DAY OF PLACEMENT PER TEMPERATURE TABLE.

◑ DIMENSION IS PARALLEL TO ℄ GIRDER.

TEMP. TABLE

TEMPERATURE TABLE FOR SETTING JOINT OPENINGS TO BE DETERMINED BY JOINT MANUFACTURER WITH THE FOLLOWING DESIGN DATA:

1. ▭ IN. OF MOVEMENT PER 10° F
2. MEDIAN TEMPERATURE OF 45° F
3. TEMP. RANGE IN TABLE FROM (- 5° F) TO (+ 95°F)

A TABLE OF JOINT OPENINGS BASED ON ABOVE DATA SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL.

GENERAL NOTES

ONE FIELD SPLICE PERMITTED IN STEEL EXTRUSIONS. DETAILS SHALL BE SUBMITTED FOR APPROVAL. NO SPLICING PERMITTED IN NEOPRENE GLAND.

AFTER FABRICATION, BUT BEFORE SHIPMENT, STRAIGHTEN STEEL EXTRUSIONS SUCH THAT THEY SHALL BE FREE FROM WARP, TWIST & SWEEP.

NO EXPANSION JOINT PROTRUSIONS PERMITTED ABOVE ROADWAY SURFACE, ON PARAPET ROADWAY FACE OR ABOVE SIDEWALK SURFACE (FOR RAISED SIDEWALK).

THE EXPANSION JOINT SEALS SHALL BE PLACED, BONDED & SEALED AS RECOMMENDED BY THE MANUFACTURER. FORM WORK SHALL BE PLACED BETWEEN THE SUPPORT BOXES TO PREVENT CONCRETE INTRUSION INTO THE SUPPORT BOX. A TECHNICAL REPRESENTATIVE OF THE MANUFACTURER SHALL BE PRESENT DURING INSTALLATION. PRIOR TO SETTING THE JOINT ASSEMBLY INTO POSITION, THE PROJECT ENGINEER SHALL DETERMINE THE PROPER JOINT OPENING.

EXPANSION JOINT EXTRUSIONS SHALL BE FABRICATED TO CONFORM TO ROADWAY CROWN & GRADE. FABRICATOR SHALL PROVIDE MEANS OF KEEPING GALVANIZED EXTRUSIONS CLEAN & SMOOTH DURING SHIPMENT AND PRIOR TO APPLYING LUBRICANT ADHESIVE FOR NEOPRENE GLAND INSTALLATION.

SANDBLAST BARS, PLATES, WT-SECTION, ANCHORAGE LOOP, & EXTRUSIONS AFTER FABRICATION IN ACCORDANCE WITH SSPC SP. #6 "COMMERCIAL BLAST CLEANING". AFTER BLAST CLEANING, THIS ASSEMBLY SHALL BE HOT DIPPED GALVANIZED.

COST OF FURNISHING & PLACING OF THE EXPANSION JOINTS COMPLETE WITH PARAPET PLATES & SIDEWALK PLATES SHALL BE PAID FOR UNDER THE PRICE BID FOR "MODULAR EXPANSION DEVICE, STRUCTURE B- - ".

BAR STEEL REINF. IN DECK AND CONC. DIAPHRAGM SHALL BE RESPACED AS NECESSARY TO ALLOW PLACEMENT OF JOINT ASSEMBLY.

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STRUCTURE

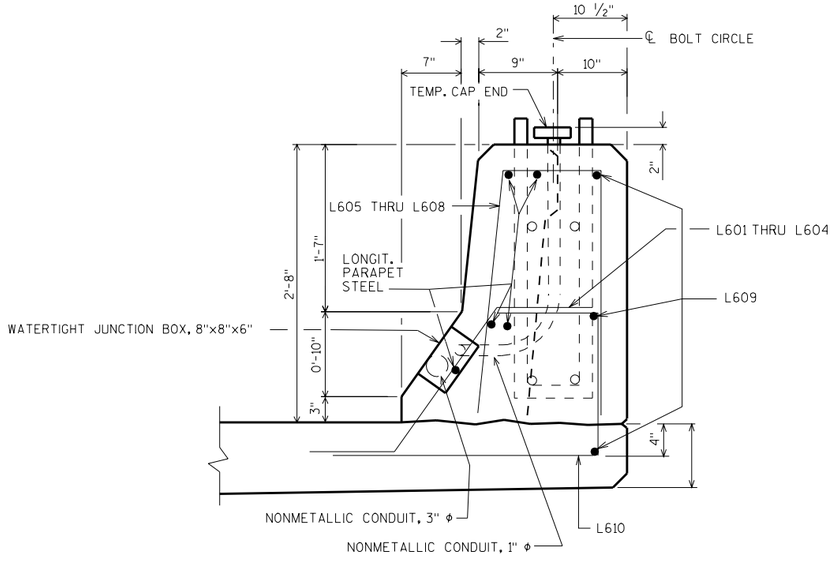
CONST. SPEC. 1996	DRAWN BY	PLANS CK'D.
	SHEET	

8

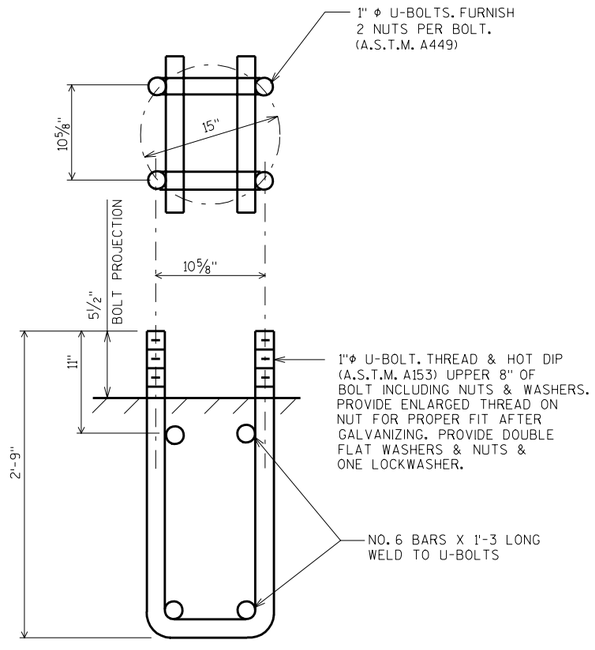
FILE= JTMODDETAILS.DGN
SCALE =

12345

1-03

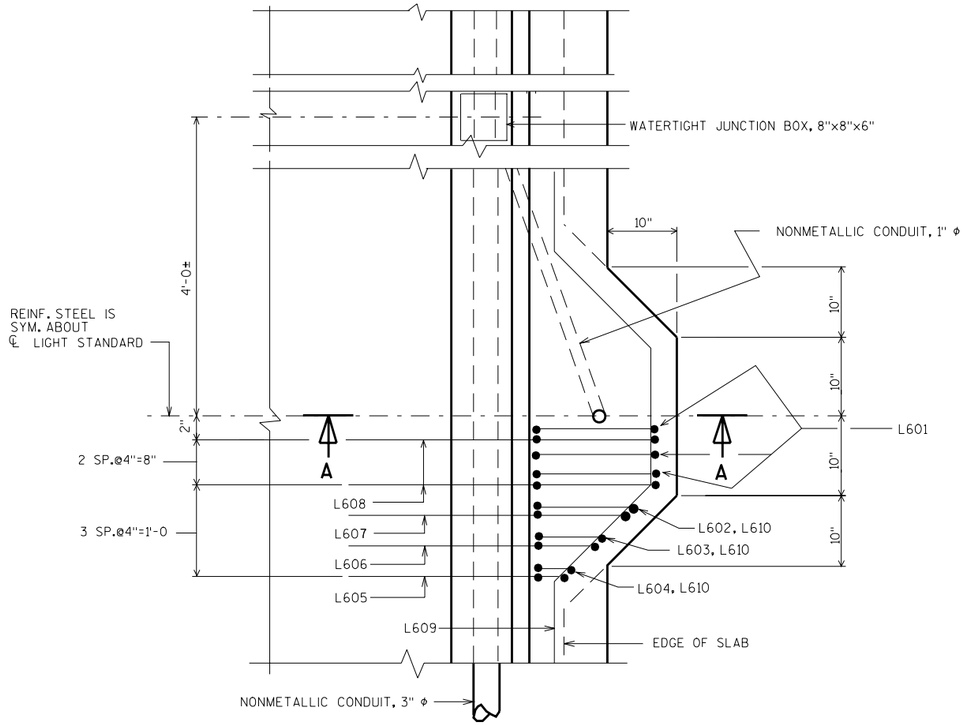


SECTION A-A



ANCHOR BOLT DETAIL

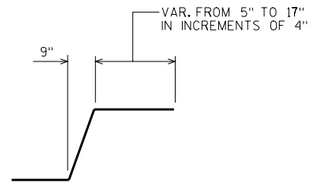
NOTE:
TO BE PAID FOR AS "ANCHOR ASSEMBLIES LIGHT POLES", EACH.



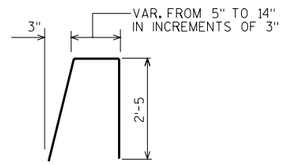
PLAN OF LIGHT STANDARD SUPPORT

BILL OF BARS

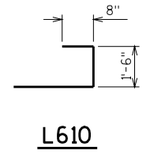
BAR MARK	COAT	NO. REQ'D.	LENGTH	BENT	BAR SERIES	LOCATION
L601	X		3-11	X		PARAPET @ LIGHT STANDARD SUPPORT
L602	X		3-8	X		PARAPET @ LIGHT STANDARD SUPPORT
L603	X		3-4	X		PARAPET @ LIGHT STANDARD SUPPORT
L604	X		3-1	X		PARAPET @ LIGHT STANDARD SUPPORT
L605	X		4-11	X		PARAPET @ LIGHT STANDARD SUPPORT
L606	X		5-2	X		PARAPET @ LIGHT STANDARD SUPPORT
L607	X		5-5	X		PARAPET @ LIGHT STANDARD SUPPORT
L608	X		5-8	X		PARAPET @ LIGHT STANDARD SUPPORT
L609	X		7-10	X		PARAPET @ LIGHT STANDARD SUPPORT
L610	X		4-10	X		PARAPET @ LIGHT STANDARD SUPPORT



L601 THRU L604



L605 THRU L608



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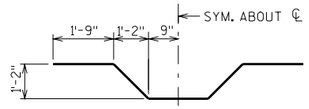

L609

ELECTRICAL WORK

ITEM	UNIT	TOTAL
NONMETALLIC CONDUIT, 3- INCH	L.F.	
NONMETALLIC CONDUIT, 1- INCH	L.F.	
WATERTIGHT JUNCTION BOX, 8"X8"X6"	EA.	

MAJOR ITEMS ONLY ARE SHOWN FOR THE CONVENIENCE OF THE CONTRACTOR.

STATE PROJECT NUMBER

- -

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LIGHTING DETAILS

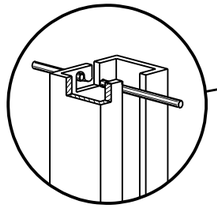
SHEET

FILE= LIT.DGN
SCALE =

9-1-94

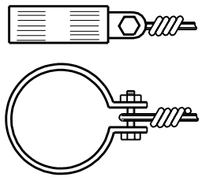
STATE PROJECT NUMBER

- -

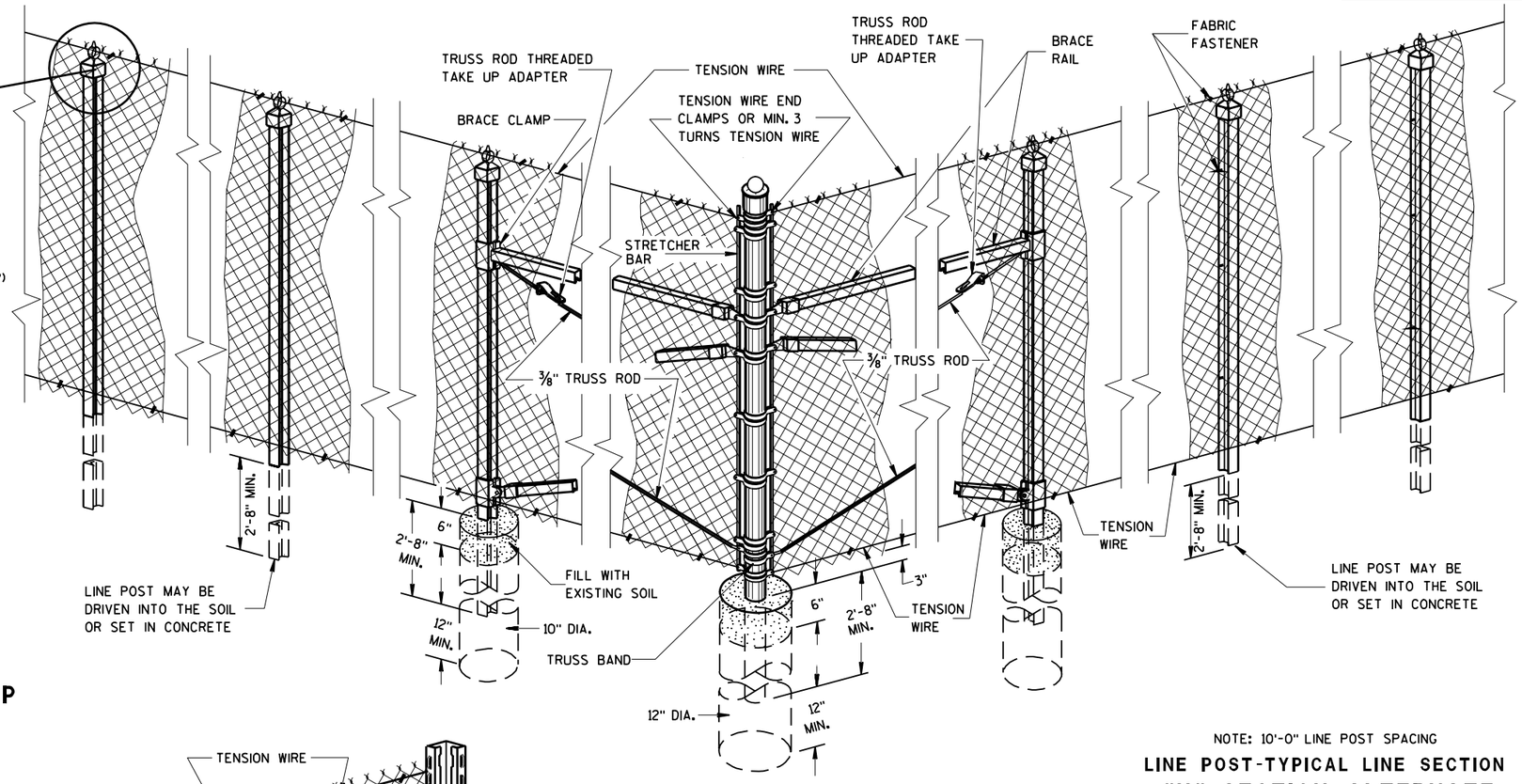


ALTERNATIVE POST TOP

(MAY BE USED INSTEAD OF LOOP CAP)



TENSION WIRE END CLAMP

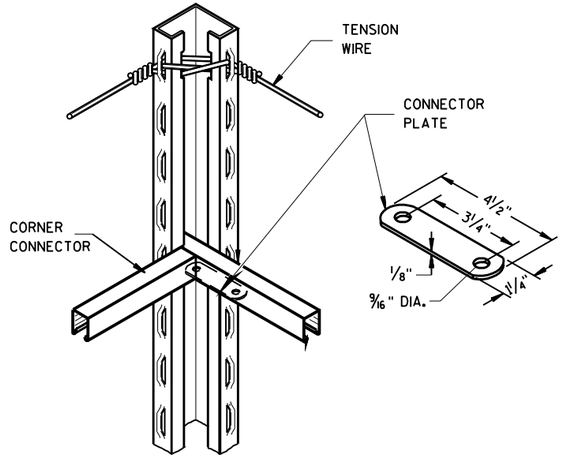


END, CORNER, ANGLE INTERSECTION & INTERMEDIATE BRACED POSTS

PIPE ALTERNATIVE

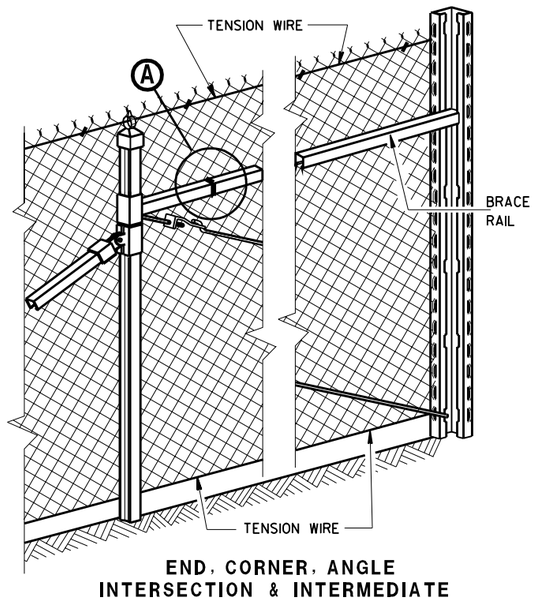
NOTE: 10'-0" LINE POST SPACING

LINE POST-TYPICAL LINE SECTION "H" SECTION ALTERNATE



BRACE RAIL CORNER CONNECTION

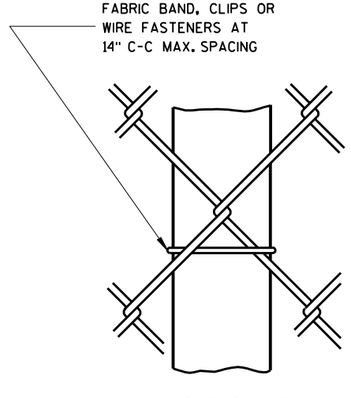
ROLL FORMED POST



END, CORNER, ANGLE INTERSECTION & INTERMEDIATE BRACED POSTS

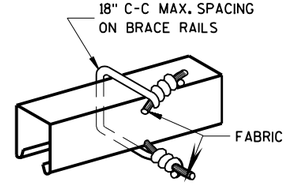
ROLL FORMED ALTERNATE

NOTE: DETAILS OF FOOTINGS ARE SHOWN ON THE PIPE ALTERNATE DETAIL



LINE POST

FABRIC FASTENER



BRACE RAIL

FABRIC FASTENER

Ⓐ

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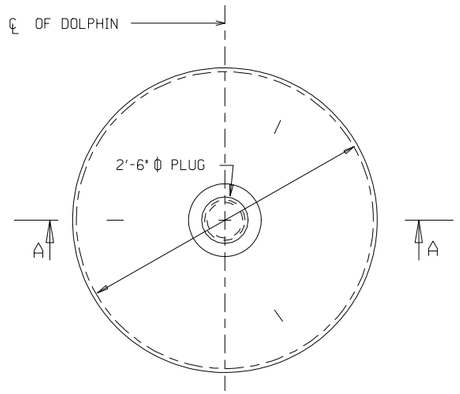
FENCE DETAIL

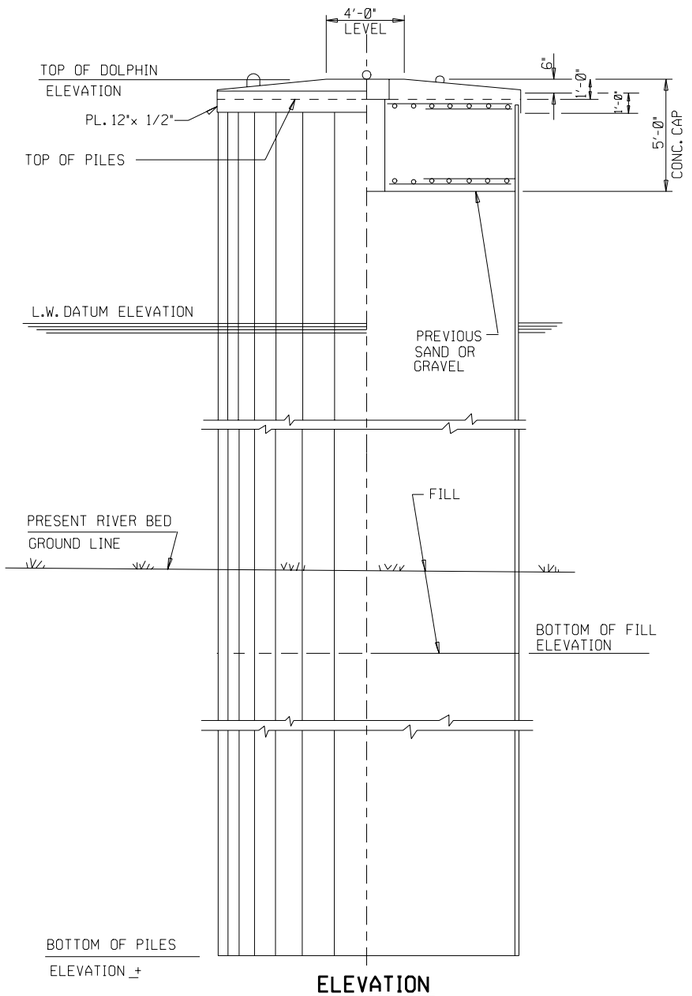
SHEET

8

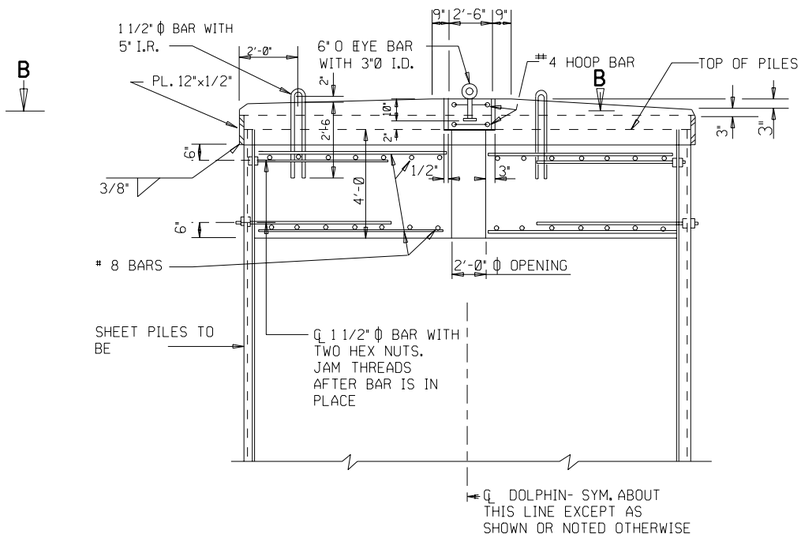
FILE= WALFENC.DGN
SCALE =



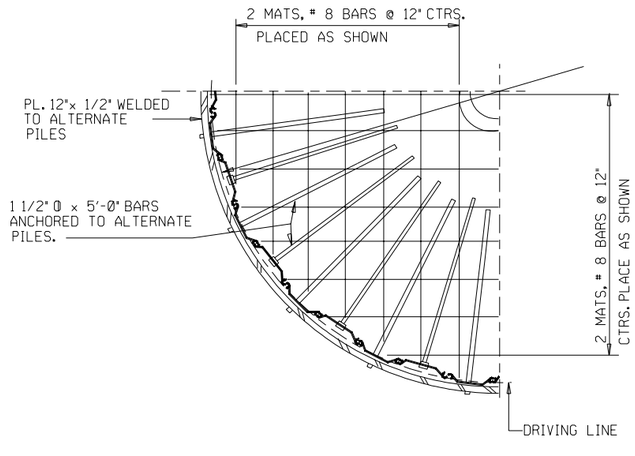
PLAN



ELEVATION



SECTION B-B



SECTION B-B

NOTES

SHEET PILE SPLICES ARE NOT ALLOWED UNLESS APPROVED BY THE ENGINEER. IF SPLICES ARE USED THEY MUST BE CAPABLE OF DEVELOPING 100% OF THE TENSILE CAPACITY OF THE SPLICED SHEET PILE.

STATE PROJECT NUMBER

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PROTECTIVE DOLPHIN

SHEET 8

FILE= WPD.DGN
SCALE = :1

12/86

9-1-94